(IDG)

P2P: THE NEXT WAVE?

BRACE YOURSELVES

WALL STREET IN FOG OVER E-SIGNATURES

Uncertainty about impact, applicability of provisions remains as law takes effect

Wall Street executives last week were unclear how to comply with the documentstorage provisions of electronic-signature legislation that

took effect yesterday. The Securities and Exchange Commission has its own guidelines for how long companies should store documents and give customers access to those electronic files. But those aren't as strict as the stipulations in the electronicsignatures law, which has numerous protections to ensure that electronic documents don't replace paper ones in

cases where consumers don't have computer access Some of us in the industry E-Signatures, page 108

ENERGY SALES FUEL EXCHANGES

Firms lock in prices, cut IT costs buying online

Corporations may be wary of buying goods directly from unknown suppliers at electronic marketplaces, but they seem to have no problem purchasing

the energy to power their factories, run their trucks or keep the office lights on. This morning, United Parcel Service of America Inc. in At-

lanta will tap into the American Petroleum Exchange (www. apexchange.com) in Rockville, Md., to buy 87 million gallons of diesel fuel and gasoline to run its fleet of delivery trucks. Days later, Memphis-based FedEx Corp. is scheduled to buy 5 million gallons of diesel

Energy, page 101

On Oct. 27, Air Force helicopter pilot 2nd Lt. Richard Vandegeer - the last name on the Vietnam Memorial in Washing ton - will be buried in a solemn, private cere-

others killed in the crash that took his life, said John Byrd, a CILHI work on the case included su-Cometery, capping a decade-long recovery and identifica-on Koh Tang Island, Cambo-

dia, where Vandegeer's h copter crashed on May 15, 1975 in the last combat action of the Vietnam War. In fact, from the Global Posi

tioning System-based receivers and laser transits used to lo cate the aircraft to the radio e-mail systems accessed by search teams in remote areas technology was a big part of the recovery operation. And it will remain so, as the lab con tinues to handle search-and soldiers of the Vietnam and Korean wars, and even those of World War IL

CEOs promise multimillion-dollar IT cost savings from their big mergers. But does it really happen? Gary H. Anthes and Kim S. Nash look back at some of the huge bank

mergers of the past few years and find out that some met their cost-cutting goals (Chase/Chemical was a home run) and some didn't (Bank One/First Chicago fell \$430 million short). Story begins on page 52.

LAST REMAINS CAN GO TO FINAL REST

Tech was key to ID of last Central Identification Laboraname on 'Nam Memorial tory, based bere. The identification by the lab, known as CILHI, took four

years and the use of "the most cutting-edge technologies available" to sort Vandescer's remains from those of the

distribution of the state of th

PO BOX 904 MAN MORTO NT 48104-8004



ANNOUNCING SOLUTIONS FOR THE NEW, NEW ECONOMY.

(<u>YOU KNOW,</u> THE PROFITABLE ONE.)

The promose of e-bostoness seems that nobod todas, on a six she to the "see common" was do should. By you that things that were laded posed and redicant when IDs were soung have returned with a veriginary e-planning, interactions, every predictable are she has in tellum, Richards to the new "sees recommon." We compain better counted of the sould fit of their securited e-bostones than SM. We have the best splitteness for collaborations, supply claims, unique, and construct reliantedpo and provide a hallog value to a company houses proposition. Our wind the "size has E-light was a small-Vicini.







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GETTING TO KNOW YOU

s seekers like John Carroll turn to the Web to learn more about potential employers. But meet otential employees and employers still prefer traditional methods to learn about one another. Page 58



FUTURE VIEWED From all angles

the next few decades, but even now, it's moving out of the labs and into practical applications. Page 74

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EWS **Q**

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- Also in the E-Commerce Community, reporter Michael Meehan writes from elfravelWorld in Orlando, where executives tout the profit potential of their online businesses. www.computerworld.com/ ecommerce.
- In our Security Community, Unisys security expert Sunii Misra discusses the mistakes companies make when building security systems. www.computerworld.com/security

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Apple Gives Sour **Earnings Forecast**

er product sales ted \$27 in overn ing, standing at just over \$26

3Com Technology Aids Presidential Debates

obatos is getting help from 3Con orp. in Senta Clara, Calif., to pro surveys that will gauge votentiments before and after the televised debates between dential candidates Al Gore and ps W. Bush. 3Com setwork es will help distribute the

ATDEADINE Customers Approve of Nortel/Clarify Union

Users say they're happy after buyout but want additional application features

EYAN DICTORGIO has spent the past year consolidating H&R Block Inc.'s theee customer call cen-The center is being stan-

dardized around San Josebased Clarify Inc's eFrontOffice custo mer relationship manarement (CRM) software, which will handie a "smoressbord" of service activity, including customer sup port for the firm's tax business, along with mortgage and other financial product ven-

tures, said DiGiorgio, vice president of Kansas City, Mo.-based H5rR : Block's service center. Last October, just after H&R

Clarify, Ontario-based Nortel Networks Corp. announced that it was buying the software maker for \$2.1 billion in stock. The plan was to make Clarify an independent subsidiary

of Nortel, with the parent help ing to boost sales of Clarify's eFrontOffice, which integrates Web face to face and phone customer in-A year later, Di-Giorgio said, the plan is working. He

said he believes that Clarify, now part of a Nortel electronic-HT WILLETT business unit, will belp H&R Block consolidate all dis parate data on cus tomers into a single view and use it to cross-sell fi-

nancial products. "As a customer, I have seen Block started working with only benefits," he said.

Other users are giving the buyout a thumbs-up as well "Nortel will take on the investment of integrating those [disparate call center channelsl topether and deliver a turnkey solution that will reduce costs and expedite time to market," said Scott Lien, information systems leader for CRM systems at Minneapolis-

tronics, appliances and enter-tainment software retailer.

"Clarify is alive and well at Nortel Networks," wrote Pegry Menconi, a research director at AMR Research Inc. in Boston in a recently published report Nortel is filling in gaps in the Clarify suite to make it me competitive with CRM leader Siebel Systems Inc., she said. But some analysts wonder just bow successful the mar riage of the two companies has been in achieving its goals both in terms of sales and in speeding integrated products

next. This overnight delive

Hallmark, best known for its

cards and gift wrap, decided

last year that it needed to

branch into other areas, said

Bellis. The firm anticipates

moving several thousand bun-

Currently, a pilot sys-

tem as no the full system will go live by

will go live by

Customers

can order bou-

Web or the tele-

phone. From there.

the order goes to a ware-

mark Flowers

"Overall, Clarify has had a olid, but not a blowout, year," said Erin Kinikin, an analyst at Cambridge, Mass.-based Giga Information Group Inc. Although Clarify said it's doing well. Nortel doesn't break down its revenue numbers, so that claim has to be taken on

Users said there has been no difference in the levels of service they receive, nor have there been any major price increases, as sometimes happens

But these customers still have some wishes they would like granted. DiGiorgio said he based Best Buy Co., an elecwould like a tool that would let him direct a customer to the most available service representative, whether that employee is in the call center or a remote office. Others would like to see Clarify's applica-

tions made available through wireless handheld devices. "Seamless support of wireless technologies would allow the product to be expanded to various field operations," said Dwight Willett, vice president and general manager of commercial services at Fabridge Inc., a Calgary, Alberta-based provider of energy distribution and services. Enbridge uses Clarify in its call centers to dis-

son retired as COMPAQ

P. said co-fearader Paul Allen IAL INC. in Islanda, R.Y., will CLE CORP. today is arme rates of its da Y MC In W

Hallmark Flowers Looking For Sweet Smell of Success from one location, said ans-Retailer branches

into floral delivery

BY MARC L. SOI Hallmark Cards Inc. is launchthe what it claims is a new kind of business - one that will offer overnight flower delivery throughout the nation from a central point. Making this possible is a cus-

tomer-order and warehouse automation system that will let newly formed South Haven. Miss.-based Hallmark Flowers take requests, package the flowers and send them to Memphisbased FedEx Corp. for next-day delivery to customers. Kansas City, Mo,-based Hall-

mark may be the first company to fulfill all its flower orders

lysts. Usually, orders made over the internet or phone are routed to a florist near the customer, as is the case with Downers Grove, Ill-based FTD.com | dles per day to start, he said Inc. and others.

The advantage of Hallmark's of system is that the company can directly ensure the \$ quality of the flower ar-

rangements, cut out the middletnan's fee and control the entire process said analysts Moreover, it allows flowers freshly harvested all over the world one day to be

house systems-manage ment application called Move from Optum Inc. in White Plains, N.Y. Warehouse workers take the flowers and bundle them with sitting in a customer's vase the | a bar-code tag that can be

patch mobile field workers. canned via radio frequency lets buyers enjoy most of the throughout the entire assemlife of the flowers, which rarely last more than a fortnight, said The Move application checks Steve Bellis, president of Hall-

the original order and indicases what to add to the arrangement before the flowers are shipped, said Bellis. Hallmark has an interface with FedEx's package-tracking sys tem to follow the flowers' progress until they arrive.

This sort of high-speed operation is a long way from Hallmark's core business. "The higgest lesson we learned is we can't win using a new business model without great technology," said Bellis.

Other companies that deal in goods with an equally abbreviated shelf life might want to consider a similar warehouse infrastructure, noted Steve Banker, a supply-chain analyst at ARC Advisory Group Inc. In Dedham, Mass. "It could be translated to other workflows where you are using fast flows and making accurate prom to customers," he said.

house technology, said Patti

Jones, IBM's vice president for

global travel distribution. The

centralized system would also

provide flight availability in-

Young noted that the IBM

formation for other carriers

Airlines Turn to XML to Fix E-Ticket Transfer Problems

New standard could be in place before next summer

The top U.S. airlines have decided to try to fix the clunky links among their individual electronic-ticketing systems in an effort to avoid a repetition of the summer's long lines of stranded passengers looking to convert an airline's electronic ticket to a paper ticket that will before next summer's travel be honored by another carrier.

Jim Young, managing direc-tor for cost measurement and distribution strategy at Continental Airlines Inc. in Houston, said an XML-based standard for sharing electronic-ticket information is being developed by the OpenTravel Alliance (OTA), a travel-industry trade association in Alexan dria, Va. Young is chairman of the OTA, which includes all the leading international air-

spite the fact that more in half the domestic fliers most large airlines travel g electronic tickets, the fustry has yet to develop a numon approach for han-ing the tickets. Here are me of the hurdles that

d to be cleared: ■ Each electronic ticket is creat

within a proprietary system aligned by the hoest fine. For example, the es that identify the passen-information on a Deba flight will not work within United's

 Airlines have built ticket-shar ing procedures only within their business alliances. When a pasoutsines autrices, when a pas-senger needs to switch to a competing carrier on a compet-ing routs, writes must com-vert electronic tickets

or that to this year, the only way to share electronic ticket infor-mention among airlines was for a carrier to **build a con-**mention to each partner with which it intended to do business

lines, computerized reservations systems and hotel chains. At the eTravelWorld conference in Orlando last week Young said the OTA is looking to fast-track the XML intercoerability standard. A draft of the standard is expected by year's end. Young said a finished version could be in place

Currently, a passenge has an electronic ticket has to convert to a paper ticket from his initial sirline if his flight has been canceled and he wishes to switch to another carrier. Airline employees mus also fill out a handwritten "flight interruption manifest" for each ticketholder who's

looking to rebook elsewhere. With an XML standard. Young said, a passenger's elec-tronic ticket could antomatically be transferred to another

airline's system. "We want to create an environment where we're treating our electronic customers better than our paper-ticket cus-tomers, which is certainly the opposite of what it is today."

Al Lenza, vice president of distribution planning at Min-neapolis-based Northwest Airlines Inc., said 67% of his company's domestic fliers use electronic tickets - making it imperative that the trans ability problem be solved. At the conference, executives from Chicago-based United Air Lines Inc. and Fort Worth. Texas-based American Airlines Inc. also pledged their commitment to fixing the problem.

Contralized System

In a separate attempt to solve the problem. IBM ner completed a centralized database that air carriers can share to handle electronic-ticket transfers, though the company has yet to sign up subscribers One strength of the centralized system would be that airlines could work in hosted environments that obey their

business rules, without mak-

putting national security at

foreign nationals hired from countries that "harbor ill will" toward the U.S. "These nnknown individuals have been allowed to gain knowledge about FAA's sensitive compa er codes and systems," Sensenbrenner said.

He added that the "most shocking" security lapse by the agency has been its use of contractors without security

need for airline workers to fill out paperwork. The XML standard would leverage technology being put into use at every major airline, he added. Young acknowledged that the constant stress put on the air transit system this summer helped persuade airlines to seek a long-term fix to the problem of transferring electronic tickets. The record number of can

cellations "was horrible for the industry, and it did actually create a lot of impetus to do this," Young said. "We need to find a way to make [transferring electronic tickets] easier for our passengers and for our seives."

DRETHIS ISSUE For more rows about the travel industry see name 24.

FAA Again Under Scrutiny for **Computer Security Failings**

system," he said

But she also told the come

Still Needs Improvement

FAA still needs to do more, in-

cluding the completion of re-

quired background checks "for

a substantial number of con-

Lack of background checks criticized

BY PATRICK THREODEAU The Federal Aviation Admir tration (FAA) continues to face harsh criticism in Congress for

failing to do background security checks on many of its contract workers, some of whom were hired to conduct penetration testing of the agency's

The FAX's computer securi-ty practices were again faulted in a report by the General Acwas released last week at a House Committee on Science hearing. The report - the third issued on the matter by the GAO since late last year reiterated allegations that the FAA is at risk of "undue exposure to intrusions and malicious attacks on its facilities, information and resources." At the hearing, James Sen-senbrenner (R-Wis.), chairmen of the Committee on Science, charged that the FAA is

tractor employees." Like its predecessor, the report released last week ac-AT A GLANCE risk by not performing appro-priate hackground checks on Grounded The FAA faces a number of

computer security probl according to the GAO, the gov ernment's watchdog agency: Systems: Perengion testing has exposed

People: Some contractors working on motion-critical systems don't have secur Physical. The FAA reeds to ansare that its

knowledged the progress the agency has made but said many areas of concern remain. For example, the report said the FAA's own penetration testing and vulnerability as sessments "demonstrate :

nificant areas of weakness." for hackers penetrating the FAA's systems. "These are the But the report, citing securi-ty concerns, didn't disclose depeople who are using their best tails about where those prob efforts to try to penetrate the lems lie. The Committee on Science may bold a closed-FAA administrator Jane Gar-vey acknowledged the probdoor hearing in the future to get more specific information

lems cited by the GAO and said from the GAO. the agency is correcting them. At last week's hearing, Ken neth Mead, inspector general tee that air traffic control systems are safe and have numer-Transportation (DOT), testified that the FAA's air traffic ous built-in redundancies that could thwart attacks. "We becontrol system is "relatively here we have a very strong and immune" from nutside attacks a very secure system," she said. because of its physical isola

tion from the rest of the agency's computer appl An earlier GAO report, retions. But, Mead added, the leased in the spring, said the current level of security may FAA had made progress on imbe undermined by the FAA's proving its computer security massive program to modern policies and procedures since the mainframe-based air traffic an initial review was done last control system. year But, the GAO added, the

Under that \$1 billion-plu project, Mead said, the system that manage air traffic control will be linked to administrative systems at the FAA poss opening them up to wider access. *Until the FAA gives as surances that this integrated network won't compromi data security, we don't th

the FAA should go forward with that plan," he said. Mead cited vulners with DOT systems not run by the FAA as evidence of systemic problems with open sys tems. For example, a team re viewing security at the DOT was able to gain access to 270 computers via an Internet connection, Mead said. Another 900 systems were deemed to

siders, he added. 9

Catalog Retailers Bank on Multichannel Advantage

Fulfillment, customer service skills gain new appreciation as dot-coms flounder

complexities of running a retail business on a budget have fily hit the dot-coms, there is renewed appreciation for rir seasoned counterparts in the physical world - particu-

larly those skilled in catalog But the National Retail Federation's NRE.com conference held here last week drove bome the point that traditional chants need to do even more to exploit their multi nnel assets, as early studies w that customers who shop or browse in more than one annel tend to spend more

money with one retailer At least for the near term. catalog retailers may be in the best position, several analysts said. They not only benefit from extensive customer data, but also never had the hassle of setting up a call center or a fulfillment center to handle the ies of picking and packing small quantities of items to be shipped to individuals, compared with trucking crates

of goods to stores cause of that, "we've been able to focus on building our Paul Pappajohn, president of e-commerce at Dallas-based J. C. Penney Co. He noted that the company's 14 telemarketing centers typically handl I million inquiries by phone or e-mail per week, and its five 2 million-sq-ft fulfillment centers processed 68 million or-

Against the advice of hired consultants, J. C. Penney used brute force" to make the company's entire assortment of more than 260,000 stock-keep-ing units available to its online ers, said Ron Hann executive vice president of

for J. C. Penney's online site Hanners said putting in a heavily customized enterprise content management system with assistance from Pleasanton, Calif-based Documentum Inc. "wasn't without pain." that staffers had to deal with

"There's very little about retail that's easy," he said, noting more than 60 databases with est, product, customer pricing, vendor and legal information. The project began 18 months ago and won't be finished until next year's holiday Other "mammoth projects" at Lands' End Inc. in Dodge at I. C. Penney include creating ville, Wis., said his company's a singular customer history homogrown legacy systems among in-store, catalog and couldn't accept the additional online channels: a Web publishing system that merchandis-

ers and marketers cao use: and nearinstant inventory checks. Those projects also won't be completed before the holidays next year simple task such as

Even a seemingly BILL BI letting customer service representatives take e-mail addresse:

over the telephone can prove challenging Bill Bass, a senior | house UPS operation in its vice president of e-commerce | ma

faced to set up an online fulfillment operation if it didn't already have one in

place. The company has 3,500 experienced customer serescetatives and an inouse that can

field, so staffers built

another database to work around the

But that's less tax-

ing compared with

the hurdle Lands'

End would have

problem.

ship second-day air for the same cost as slower service because of the volume Target Corp. in Minneapolis

acquired a Minnesota distribution company skilled in catalog fulfillment to provide the back end for its Internet operation. But while the acquisition gave Target the "advantage of speed" to work on gift registries and other Web apolications. Gerald Storch, Target's president of financial services and new businesses, said he realizes that the cataloger's ad vantage is temporary. "Wal-Mart's a great logistics compa ny, and they can build a pick and-pack distribution center and run it well. It's not rocket science," Storch said.

Carol Ferrara, an analyst a Gartner Group Inc. in Stam ford, Conn., said she expects the catalog retailers' advantages will be short term. It will be perhaps another two years before other retailers catch up with their multichannel infrastructure, Ferrara said.

Questions Remain About ETrade Security

Brokerage claims leaks plugged, but analysts skeptical

Analysts continue to raise questions about the security of customer data at ETrade Group Inc. after the company plugged a hole in its pas

torage software last week. The online brokerage, in Palo Alto, Calif., installed what it says is a more secure version of the password storage software after security researchers discovered that customer accounts were vulnerable to outside access.

According to the firm, a flaw was found in the scrambling techniques used to store par word data on cookies used by clients' computers. An ETrade spokeswoman said the problem has been corrected and no customer data was released. But ETrade password infor-

mation stored on cookies could still be vulnerable to a "cross-site scripting attack" discovered by researcher leffrey Baker, who posted a de-

BugTraq mailing list. In his posting. Baker said he alerted ETrade to the problem a month earlier, but when the company failed to take action, he felt compelled to alert customers.

ETrade seems to have rolled out a new cookie scheme over the weekend," wrote Baker last week. "But it isn't going to do one bit of good unless they plug the dozens of cross-site scripting problems littering their site." After Baker's oriennal Sept. 22 posting, program mer Marc Slemko posted a program that unscrambled ETrade account passwords. There have been no reports of the eminit being used to access accounts. Because customer cookie information changes each time a

user accesses the sire, the passwords may be vulnerable for only as long as the user is logged in, said Elias Levy, chief technology officer at security portal SecurityFocus.com in San Mateo, Calif.

While the cookie information may give attackers unauthorized access to account data, Levy adds that ETrade's new scrambling schemes may secure other passwords peeded

Users of the cross-scripping attack create a Web link that delivers access to cookie password information when clicked on by unsuspecting ETrade customers. Accordis to Baker, the cross-scripting at

tack, which can be delivered via links in e-mail or Web sites. Password

Protection

Security researcher Jeffrey Baker, who alersed ETrade to password vulnerabilities. the following steps to protect their occounts:

 Disable JavaScript on the browser Avoid using Elizade's six-month pass: word storage option.

n and after using Elicade. Remove Elizade cookies after using the site to make cooker likes washowly

a Use the seconds "trading pass which appears to be sale

already afflicts other sites. He ested several measures that customers could take to protect their account pass-

words (see chart) ETrade didn't respond to repeated requests for comment on the cross-site scripting attack. But ETrade customer Jim Sander, who identified himself as a systems network and secu-rity administrator, aired his concerns on the site's cus

tomer discussion area Sept. 26. "What are they going to do when someone steals account information and makes large wire transfers to foreign banks? he asked, "Why haven't we customers been informed? Sander noted that when Western Union Holdings Inc. experienced security probl on its site last month, it at least alerted its customers to the problems, "By remaining silent. (ETrade) is not serving its customers, continuing a long list of customer service problems," wrote Sander, "I am sure I speak for thousands of

customers when I say that more than anything else, I value good service - and I vot with my feet, [ETrade] won' get a second chance." IDG News Service correspon

dent Elinor Abreu contributed to this story.

New ARCserve[®] 2000 Offers Serveriess Backup And Restore Plus Hundreds Of Other Enhancements.

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BRIEFS 6AO: H-1B Program Needs More Oversight

id last week in a report. The GAO id the U.S. Department of Labor mited to ensuring that the enoh as wages paid, is correct. The iD recommended expanding the northers's such

undahl. Oracle Partner

p. and its Edison, N.J.-b oracis Corp. Under the deal lab! and DMR will provide be and integration service de's E-Business applic

del Cuts Server Prices

reek that it has reduced the prices it its antire line of PowerEdge arvers in the U.S. by 14% to 47% and Rock, Texas-based cor

Short Takes

CATIONS INC. is as MOBALCENTER INC., a unit of SOFT CORP. M

Slippery Road Ahead For **Wireless Location Apps**

Analysts say loss of privacy a potential hazard for users, big liability for providers

BY MATT HA

loss of pri-Vacy caused by the use of wireless devices will rock the budding wireless location industry, analysts and users warned last

week. "I think there are huge land mines with wireless ahead." said Alan Davidson, staff counsel at the Center for Democracy and Technology in Washington, a public interest group that works with industry and government on social issues

involving technology. The issue is especially acute with wireless vendors prepar-

ing location-based applications that will allow carriers and marketers to track the location of users and send them alerts about sales on services or personal goods, he said. Compared to the privacy up-

roar over the wired Internet in recent years, privacy concerns over wireless will be "exponentially bigger," Davidson said at a conference of the Personal Communications Indus-

try Association bere "The first time somebody steals location information on the wheresbouts of a kid and he mes missing there will be a backlash and lawsuits," he added. Or a phone company employee could have a crush on a woman with a cell phone and use the purloined data to follow her around, he said.

While vendoes downplayed the potential hazards of location-based services, market analysts Risto Perttunen and William I. Passmore at New Yorkbased McKinsey & Co. said that the concerns are real and that the industry isn't addressing the issue sufficiently. People have not tralized

the value of location services and have not realized the loss of privacy involved." Pert-

rolling out wireless applications to consumers or workers. having the ability to track the whereabouts of customers or employees will require a higher level of corporate readiness. Passmore said

"Companies need to realize they will be scrutinized by all sorts of groups," he said

The Federal Communica-

Microsoft Wins Key Battle Supreme Court's pass

on case buys time breskup beginning to appear unlikely, Bruce Levin, informa-BY PATRICK THIRDDS AN tion technology manager a Faulding Inc., an Elizabeth, N.I.

Microsoft Corp.'s antitrust fight against a breakup of the company was beloed in a bie way last week by the U.S. Supreme Court when it rejected government arguments that the case deserved an expedited review by the nation's highest

court because of its "immense" contentiv importance The immediate impact of the Supreme Court's decision is to prolong a case that has been in litigation since 1998, when 19 states and the U.S. Depart-

ment of Justice filed a lawsuit against Microsoft accusing it

Ticktock The U.S. Court of Appeals wants to move quickly on the Microsoft case, Within hours of

the Supreme Court decision lost week to not expedite the case, the appeals court issued o schedulier order. What's up this week. But sole, must propose a briding schedule today with

moles due Phursday How long will this take? Best extracted say the appeals court will conclude its work by the middle of need way

Final decisies: The Suprane Court

should get the case by next October, with a final decrease due by may 2002.

set Oct. I of next year as the deadline for carriers to beein providing location services for wireless phones, which would help public safety officials respond to emergency calls from cell phones to find someone lost or injured in a car crash. fronically, the public safety

protections of that FCC pro sion could cause privacy and safety concerns of their own, some analysts said. "We ought to build systems that encourage 911 location ser-

based generic pharmaceuticals

maker, said the case will have

no affect on his IT planning. "It

will have virtually no impact or

the deployment of technology

Levin isn't alone in that be-

lief. "I think that the time frame

could be such that by the time

they get around to a decision

(the case) will be a most point."

said for Murhlethaler, informa-

tion systems manager at Mani-

towoc Cranes Inc. in Mani-

The case will now go to the

U.S. Court of Appeals for the

District of Columbia, a court

that may be a far friendlier

venue for Microsoft than trial

Judge Thomas Penfield Jack-

The company's reaction was

muted. If Microsoft had just

received, in effect, a home-

ing to show it and risk angeris

the appeals court. Microsoft

spokesman Jim Cullinan sim-

ply reinerated what the com-

pany has said all along: that it

remains "confident of our case

on appeal." The Justice Depart-

ment was similarly restrained

and said through a spokes-

rson that it's looking for

court advantage, it wasn't go-

towoc, Wis.

son's courtroom

at our company," he said.

vices but that aren't just per-

sonal tracking systems," said Davidson. The location of a wireless user could fall into the hands of the police, threatening the innocent, he added, a

as expeditiously as possible. Seven judges will hear the Microsoft case. Two of those judges. Stephen Williams and Raymond Randolph, were part With a final decision now of a three-judge panel that gave perhaps two years away and a Microsoft a significant win in reversing an injunction issued by Jackson that prohibited Mi-

crosoft from bundling its Web browser with Windows 95 The appeals court "is likely, to be sympathetic to a number of the arguments Microsoft will make," said William Kovacic, a George Washing University law professor. Microsoft "can have a strong mea sure of confidence that they

will avoid a breakup." Involving the appeals court in the case "could only lead to [Microsoft's] advantage," because the company will have more opportunity to argue its case before it inevitably winds up in the Supreme Court, said Yee Wah Chin, an antitrust attorney at Mintz, Levin. Cohn.

Ferris, Glovsky and Popeo PC in Washington Time helps Microsoft. "Each day brings new technological and economic developments that arguably render this case

petition," said Hillard Sterling, an antitrust attorney at Gordon & Glickson LLC in Chicago Michael Cusumano, an MIT management professor and Computerworld columnist, said the urgency of the case has long since passed. "The time to

have taken strong action on this issue was maybe three or ward to presenting its appeal four years ago," he said.

I can't believe I sent that email!

It's enough to make you want to scream. You're in your office and by mistake, you send an email you shouldn't have. Maybe it's to someone inside your company, maybe someone outside. Either way, it's gone. And you stare helplessly at the screen, wishing you could take it back.

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Email you can get back – now that's something to scream about!



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technology of its 140000 system - more than \$600 of which have been installed so

Sun Banking on Systems Powered by UltraSPARC-III

Overcoming migration woes before reaping benefits of new line is key, analysts say

Microsystems Inc's nen UltrasPARC-III microprocessors should give users substantially better performance than Sun's current

products analysts said. But enterprise users will have to wait six months to a year before the high-end Ultra-SPARt III servers begin for ship And even their, they will need to swap out estating systems and migrate applications to the Solaris 8 environment before they can take advantage

of the enhanced performance Sun last week innounced the Son Blade Rest work to tion and a low-end server called the Sun Fire 280R, based on 750-MHz and 900-MHz versions of its UltraSPARC-RI chip, respectively. The compamy also ammented a lens and version of the Sun Blade based on a 6400-MHz eltip. That yersion will be mulable only through meetion on Sax love brodeBa Inchaire

More Products in Mix

The systems after more than double the performance and capacity of comparable models the market today, said Shahin Kahn, a vice president at Non. They are the first in a line of systems based on the UltraSPARU-III, which is Sun's second generation to bit chip architecture and third-wenera-

tion UltraSPARt line Sun will release a series of workstations and servers based on these chins in the next few months. Topping off Sun's new Star bire line of servers will be the Star Cat server, which will initially support up to 72 processors and more than har processors in later configura-

By spreading out its product releases over the next few months, "Sun's emphasis is much more on continuity rather than technology," said

Sharf Wang an open analysi at Stem Roy & Earnham Inc. in users that there is a future to their uses trivette in Soin

Meeting Demand Is Goal But it's important that Son

the products within the next ten months, and Mike Otto on tive Systems Device Inc. in "It's a credibility issue If you

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Giga study finds fed standards not always used online

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sist disabled visitors Earlung to include on h has tures on Web artes can position frustrated customers and lost business for companies, said Steve Telleen, head of Gher's Web Site ScoreCard service and author of the study Frery Web site should do a set of basic things. We couldn't

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existing bones, and Kalin As a do found operades and will hore it they want to take all contact of the performance of tend by Citan PARK, III. executes on time and delivers

However, such hos snaps aren't musual in the loch end server space and form Limitan makes at D II. Brown Assect stee Inc. in Port Chester, NX Intel Corp's upcoming IA'nd in hitecture, for measure, will mode smile teldi upstales he more on conting high-end Intel bruch and Kahn

Big-Name Web Sites Lack Basic Guidelines

Act and the Standards for Ineverythme," Telloon and "The types of though that were mospublished results from leading the are periodally russ from but usability studies. at the same time, they are the Company on fulling to structure of the Web site. aftere to some of the most basic standards on the front end

Litta companyd some of the Web's top sates with standards recognized by the hyderal Irade Commission (FIt's, the Americans With Disabilities

Not Found 66% of home cases faint to nclude action links such as how to

has online from more about speed ic products or manage personal

60% taled to provide a link to a anyway tolay from the home page 50% ddn't have a link to a site map from the home page

43% were missing basic new caling airs, privileg led gaves tion aids for rongraphics users. global navigation bars and links back to the home page 39% lafed to include a link to a

ofe reach look 35% were missing an employ

16% ddril have a corporate

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Sun's New Software and Services

New software and services for Sun's UltraSPARC-III systems

Sun Remote Services Net Connect software: A self-service, Web-hased system-monitoring tool, Available for free download in January.

Sun Orid Engine software: Designed to let users speed application performance by letting them optimally access and use idle computer resources in a network. Available for free

Solaris 8 migration services: Readiness evaluation service, application fitness and implementation services

paired and the option to use a keyboard for those who can't

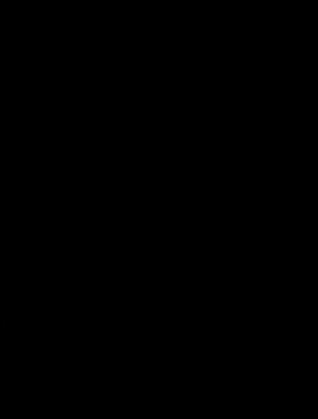
Tom Harms, prographic operations manager at Hewlett-Packard Co.'s Web site. HPcom, said HP this week will Launch a complete redesign of ns Web site, with a new emphasis on access for the disabled and greater navigation help for international cus-

tomers. HPcom was one of the sites reviewed by Giga. "In terms of access for the disabled, most companies have fallen down on that," said Harms. 'A large part of our new look-and-feel effort was to make the papes conform to the Americans With Disabilities Act. It's been deemed highly

Gail Houck CFO and presi dept of Alexandria Vachanad Honek and Associates, a Web development consulting firm, said a shift is occurring in the online world of corporate America. In the past, Houck said, companies were more for cused on the design of their

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operate a mouse. **New Emphasis**



Sun Banking on Systems Powered by UltraSPARC-III

Overcoming migration woes before reaping benefits of new line is key, analysts say

YSTEMS based on Sun Microsystems Inc.'s new UltraSPARC-III microprocessors should give users substantially better performance than Sun's current products, analyses said.

But enterprise users will have to wait six months to a year before the high-end Ultra-SPARC-III servers begin to ship. And even then, they will need to swap out existing systems and migrate applications to the Solaris 8 environment before they can take advantage

of the enhanced performance. tioo and a low-end server called the Sun Fire 280R, based oo 750-MHz and 900-MHz versions of its I liter SPARC-III chip, respectively. The company also announced a low-end version of the Sun Blade based on a 600-MHz chip. That version will be available only through auction oo San Jose-hased eRoy Inc 's size

More Products in Mix The systems offer more than uble the performance and capacity of comparable models on the market today, said Shahin Kahn, a vice president at Sun. They are the first in a line of systems based on the UltraSPARC-III, which is Son's second-generation 64-bit chip architecture and third-generation UltraSPARC line

Sun will release a series of workstations and servers based on these chips in the next few ths. Topping off Sun's new Star Fire line of servers will be the Star Cat server, which will initially support up to 72 ssors and more than 100 processors in later configura-

By spreading out its product releases over the next few months, "Suo's emphasis is much more on continuity ber than technology," said Shao F. Wang, an equity analy at Stein Roe & Farnham Inc. in New York. 'The idea is to show users that there is a future to their investments in Sun

Meeting Demand Is Goal But it's important that Sun

the products within the next few months, said Mike Otto, an account executive at Innovative Systems Design Inc. in Edison NT "It's a credibility issue. If you set an expectation and don't execute, that's a problem for

existing boxes, said Kahn. As a result, users won't be able to do board uperades and will

have to move wholesale to new boxes if they want to take advantage of the performance offered by UltraSPARC-III. However, such box escape executes oo time and delivers aren't unusual in the high-end server space, said Tony Jams, an analyst at D. H. Brown Associates Inc. in Port Chester, NY. Intel Corp.'s upcoming IA-64 architecture, for instance, will

The much higher bandwidth and interconnect speeds supported by the new chips make it impractical to use them in

portant time for Sun. Much of the company's near-total dominance in the high-end Unix server space over the past few years has been based oo the

superior performance and technology of its E10000 system - more than 3,000 of which have been installed so far, at an average price of more than \$1 million

But systems such as the recently announced Superdome from rival Hewlett-Packard Co. could begin to narrow that performance gap if Sun doesn't start shipping the new servers during the next few months, Inms said.



Big-Name Web Sites Lack Basic Guidelines

Giga study finds fed standards not always used online

A survey released last week by industry research firm Giga Information Group Inc found that most of the Web's top corporate and e-commerce sites don't meet some basic industry and government standards

for access, navigation and customer interaction. As part of its Web Site Score-Card study, Cambridge, Mass.based Giga reviewed 200 ms-

jor Web sites and found that most lack basic yet fundamental features such as privacy in statements, action links that let users interact with the site. global navigation aids, textonly access, search tools and other accepted methods to as-

sist disabled visitors. Failure to include such features on Web sites can result in frustrated customers and lost

business for companies, said Steve Tellern, head of Gign's Web Site ScoreCard service and author of the study "Every Web site should do a set of basic things. We couldn't

find a single size that had proporthing " Telloro said "The types of things that were missing are generally easy fixes, but at the same time, they are the structure of the Web size." Girs compared some of the

Web's too sites with standards recognized by the Federal Trade Commission (FTC), the Americans With Disabilities

ternet Commerce, as well as published results from leading usability studies.

*Companies are failing to adhere to some of the most basic standards on the front end of their e-businesses," said Telleen, "Some companies do fairly well, and some are completely lacking. This study gives them something to make decisions on. They can look at it as a scorecard or as an ana-

lytic tool." A spokesman for the FTC. tection laws, said that although the commission hasn't written any specific regulations for online companies, "everything we require for brick-and-mortar businesses, we require for online companies." For example, online consumers must have the option to cancel an order if the vendor can't ship a product in the time advertised.

Likewise, the Americans With Disabilities Act of 1990 prohibits discrimination on the basis of disability in both the private and public sectors Examples of Web aids for disabled people include colorcoding for the visually impaired and the option to use a keyboard for those who can't operate a mouse

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(🖾 Cisco

9

dustrializing

Oracle Software

Tarnets IBM Users

users to run its database software on IBM's \$/390 maintrames with a new technology called Operating System Dependent Interface, according to company officials. The lechnology, which was announced Release 3 within the next month

Study: Publishers Need To Revise Biz Models

iems and lawsuits aimed again alleged piracy won't stop the unauprized swapping of digital content on Web sites such as Napster. ing to a report from Forresto search Inc. in Cambridge, Mass. instead, publishers must develop new business models to give consumers access to content, accord ing to the report. Forcester products that as artists and authors break away from publishers and the use of and book publishers could lose \$3.1 idion and \$1.5 billion, respectively

3Com CEO Resigning

Six months after a company reorganization aimed at reversing a recent string of financial losses. 3Com Corp. last week announced that CEO Eric Benhamou is leaving his post effective Jan. 1. Benhamou. who has led the Santa Clara, Calif based networking company for 10 years, will remain as 3Com's chairman. Succeeding him as CEO will be Bruce Claffin, who was named

Med Site to Cut Staff

anta-based WebMD Corp. will lay off 1,100 employees from its work rce of 6,000 as part of a restruc ng to streamline the online with care site's recently acquired anses. The layoffs will occur by end of next year. WebMD will n consolidate offices and data lers, reduce marketing and pro-

Volvo to Market Its New Vehicle Via AOL

Bold' campaign to cost half of traditional promotions, but it may hurt automaker

North America In. in Bockleigh N.L. an automak er popular among well-to-do and safety conscious parents, same to tap mos a wider market by Laura h me an exchange Web promo-

The compage, which will offer each WII subscriber who configures the car online \$2,000 worth of free options. will cost about \$10 million or half the cost of a traditional promotion, the company said Violen and it plans to promore its new Not luxury sed in on Oct. 15 using its Web site (www.neoroleolatum.com), A(1) and a ten print ads in carbuff magazine, Unlike

Volco's two other schole bunches earlier this year the automaker will bypass advertising in most national print media, on television and extra and with other Internet service

Ford Pursues Start-Ups

to select software firms last week with hun nurchases excludes to undisclosed equity stake in Bios. Group Inc., an analytical software Ism in Secta Fe N.M. Ford CIQ Jim Yost said the Bios software could become a critical

component of the automaker's build-to-order intuitives, hecause f will asset in analyzon consumer data about vehicle options and configurations.

trafficon last week for equity in Captura a Bothell Wards maker of Inspective cronition software that it plans to and out worldwale. dozen minanty courty stakes or technology start-up companies and it's far from alone in having

such attannements

Other major businesses, such as automotive leader General Motors

remaders and Medical s Analysis Libeled the Lunch a risky strategy that wall nonetheless serve as a homes test for Dulles, Varbased AOI and the subdet of online

has a very bold more by Volvo to use the Internet solch to market cars, and for Rink ct. in indist at market research firm CSM Worldwide Inc. in Northville, Mich "Typi calls, automakers want as much exposure as they can get end by using print and televion, som can do that," he added 'By using the Internet only they're taking a risk of

lesance spenses Any of AOI 's 24 million subsenbers who configure their vehicles online will purchase them through local dealers. these same options won't be available to car shoppers who use other internet service

Video, a ford Motor Co, sub-

Ford Motor Co. continued to have Corp and technology lims Novell

Inc. and Oracle Corp., also use internal equity funds to send investments in start ups from which they

The start ups ont some cumbal utifion, and we get a more closely led interest with them and a part in figuring out where they are going.

Analysis said these types of rivestments may engrove lecting logical besitut won't have much mpact on Wall Street "This type of investment is not

conditing that will make a much most on how merday, value the company" sad Efram Levy, a fr tonnal analyst at SEP Freeh. Group in New York, "Eguty-myest ments are positive, but it's rarely going to be the case that a small routy mesiment changes the

stance of a company

Test Drive

Volvo turns to AOL to launch its newest vehicle: Volvo will advertise its sport sedan on AOL's Internet service

e Volum to less

cles this year at a cost of \$20 will run until next March The deal sounds "great for

Phil Bienert, Volvo's manage AOL, said lim Nail, an online er of electronic business, said advertising analyst at forrester the launch campaign, called Research Inc. in Cambridge. Revolvolution, will cost about Mass. TAOL pard to give its 510 million, which is half as members special deals, but I'm much as the other two media not sure what it gives Volvo. blitzes. "We wanted to have because it ties one hand be a launch that was sustainable hind the back lof dealers! because they cannot make the said Bienert, The ADL deal same offer in showrooms."

IBM Ready to Launch First 64-Bit Mainframe, Freeway

IRM this week will approunce

Freeway, its next-peneration System 300 mainframe. The server will use IBM's first 64hit mainframe processors and come with greatly expanded memory capabilities for busing ing application performance Each Freeway server will be capable of supporting up to lo peneral-purpose processors plus four processors dedicated to specific tasks such as 1.0

processing said John Phelps,

sidiars, hunes the novel com-

pages will generate 40,000 Seat

vehicle sales, or roughly one

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un, which typically releases a

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an analyst at Gartner Group Inc. in Stamford, Conn. The expectation is that each processor - or cheine - will deliver 250 MIPS to 270 MIPS. compared with the 200-MIPS

rating of IBM's current Gener ation 6 mainframes Pricing Efficiency

One of the most consist as pects of the server will be in support for new pricing models, Phelossaid.

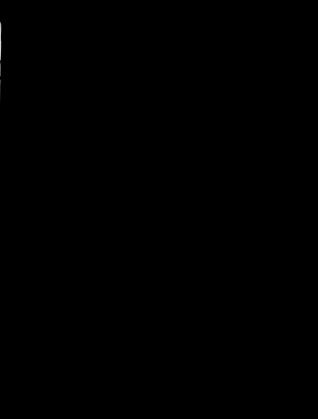
The server will enable users to tic application workhoals to specific processors or sets of processors in a way that is cerifiable and measurable by both users and unitware vendors This should make it possible

for software vendors to charm for their software based on the portion of the mainframe that it runs on rather than on the capacity of the whole system. which is its current practice. If cendury accept the tech nology, Freestiy could pave the way for much lower, usagebased mainframe software pricing in the future, Phelps said. From a pure technology over spective one of the most significant enhancements of the BOW NOTICE IN IES NUMBER OF

expeater stirtual and main more ore said one user, who wished not to be adentified The expectation that the new servers will support anywhere from 128GB to 512GB of real main memory initially with tel-bit virtual-mentury support becoming acuitable later - should greatly expand

on the 2GB real-memory support available un current 31-bit maintrames the user said As a result, users will be able to run large applications such as databases much faster and with much less complexity

than before, he said. 18M confirmed that it will announce Freeway new week but offered no further details.



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Online Inc. The campaign, which will offer each AOL subscriber who configures the car online \$2,100 worth of free options, will cost about \$10 million, nr half the cost of a traditional promotion, the company said. Volvo said it plans to promote its new \$60 luxury sedan on Oct. 15 using its Web site (www.revolvolution.com), AOL and a few print ads in

car-buff magazines. Unlike Volvo's two other vehicle launches earlier this year, the automaker will bypass advertising in most national print media, on television and radio and with other Internet service

Analysts labeled the launch a risky strategy that will nonetheless serve as a lienus test for Dulles, Va.-based AOL and the viability of online advertising.

> **Bold and Risky** "It's a very hold move by

Volvo to use the Internet solely to market cars," said Joe Barker, an analyst at market research firm CSM Worldwide Inc. in Northville, Mich. "Typically, automakers want as much exposure as they can get, and by using print and television, you can do that," he added. "By using the Internet only, they're taking a risk of losing exposure

Any of AOL's 24 million subscribers who configure their vehicles online will purchase them through local dealers. These same options won't be available to car shoppers who use other Internet service providers. Volvo, a Ford Motor Co. sub-

Ford Pursues Start-Uns

paign will generate 40,000 S60 vehicle sales, or roughly one quarter of annual sales, and also cut advertising costs. Volvo, which typically releases a new vehicle model every few years, has introduced two ve

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The expectation is that each processor - or engine - will deliver 250 MIPS to 270 MIPS. compared with the 200-MIPS rating of IBM's current Gener-

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The server will enable users to tie application workloads to specific processors or sets of processors in a way that is verifishle and measurable by both users and software vendors.

This should make it possible

for software vendors to charge for their software based on the portion of the mainframe that it runs on rather than on the capacity of the whole system which is its current practice. If vendors accept the technology, Freeway could pave the way for much lower, usage-

based mainframe software pricing in the future, Phelps said. From a pure technology per spective, one of the most significant enhancements of the new server is its support for greater virtual and main mem-

ory, said one user, who wished not to be identified. The expectation that the new servers will support any where from I28GB to 512GB of real main memory initially with 64-bit virtual-me vory support becoming available later - should greatly expand on the 2GB real-memory sup port available on current 31-bit

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announce Freeway next week but offered no further details &



How business

The great e-business shakeout is well under way. For those who didn't make it, our condolences. At least the end was quick.

For those who have made it, who broke the code and figured out how to build a truly viable e-business, our heartiest congratulations.

As it turns out, many of these successful companies-including the majority of the Fortune e-50-have built their e-businesses on an exceptionally strong foundation.

The BEA E-Commerce Transaction Platform."

This award-winning set of innovative software and services is uniquely designed to help businesses rapidly develop and launch advanced e-commerce initiatives. It's an end-to-end solution that includes rich personalization and complete B28 integration. In fact, it's now the global standard by which all e-commerce software is measured.

Which explains why it's BEA's market-leading platform that powers Nokia, Chase Manhattan, FedEx, Amazon.com, United Airlines, Weils Fargo, E*TRADE, Owest and over 6,500 other successful e-businesses. Find out how we can help yours.

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HR Roles Growing as Labor Market Shrinks

IT tools are helping human resources play . more strategic part in business operations

BY JULERNA DASH

managers are beou to use information technology to reinrent themselves from paper pushers to business partners, according to participants at last week's Human Resources

Technology Conference here. As companies confront a skills shortage, they value the strategic role that human resources managers can play in hiring and retaining workers, according to Jenni Lehman, research director at Gartner Group Inc. in Stamford, Conn. "At the highest level, organizations are realizing that the 'soft issues' make a difference."

the said And while human resources managers have always played zations, many commanies now have the capability to automate

OF controverse administration

functions, freeing up human

to help business managers determine which hiring methods are the most successful and cost-effection some strategic role in organi-

Quantifiable Snaks

Del Monte's approach has been to break down key human resources functions into areas such as recruitment or training and identify quantifiable bustness soals for those areas. So, if there was a goal to reduce turnover by 10%, human re-

Wallace in Fort Mores, Fla.

For instance, at Fresh Del

Monte Produce Inc. in Coral Gables, Fla., buman resources

is using a business intelligence

application from Oracle Corn

its administrative burden or report the success of its hiring strategies, human resources executives need IT support, said conference attendees resources executive comsources and line managers plained that the IT department

database that comprises some mains, with no prior knowlples of racial and body types edge of the physical characterfound throughout the populaistics or even the number of in tion. Byrd said, and allows scidividuals involved in an incident, according to a command briefing. It's also more useful than DNA in cases where the number of individuals involved raises the possibility that the same base pair sequence will

ancy Bloom & | could use the business intelli-

gence tool to capture turnover

data and determine which strategies best achieve that.

plication in the Americas, the

company is targeting the U.K.

and South Africa this month

and the Asia/Pacific region

next year, said Louis Tenazas.

Del Monte's vice president of

But before a firm can imple-

ment technologies that reduce

Having implemented the an-

of remains, Byrd said. But ultimately, it is often dental records that affirmatively identify remains. "The anatomy of teeth, cavity pat

tions can lead to the identification of an individual," much like fingerprints can, said Army Lt. Col. Cal Shiroma, a CILHI forensic odontologist. CILHI maintains an exten-

sive dental database, called the Computer Assisted Post Mor-Identification system, which contains the dental records of all U.S. personnel missing in Asia. Shiroma con scan in as many as 30 X rays of a recovered tooth and use the database's search engine to

menerate candidates for a match. A computerized dental radiography system then finetunes that match, Shiroma said. Vandegeer's remains were first identified in 1995, and the process was completed last November Independent su-

JUST THE FACTS Bearing Fruit Del Monte's recommendation for making human resources more business-oriented:

iness functions (salary, training naturent)

in her company is risk-averse and won't agree to beta-test

new human resources software, even though it can provide cost-effective access to the latest tools. Human resources needs to get support from the CFO and other senior executives before

IT will support the business intelligence tools that a human resources manager may want, said Kazim Isfahani, a senior During a break, one human analyst at Cambridge, Mass. based Giga Information Group

Continued from page 1

Vietnam

*Any veteran would appreciate knowing that our country would care enough to come looking and remove us from a udhole and bring what was left back home," said Warner Britton, a retired Air Force pilot who flew helicopters similar to Vandegeer's in Vietnam. But more important, the proram gives some hope to fami-es who lost these men." Byrd said the seven water

and land recovery operations on Koh Tang for remains from Vandegeer's helicopter started in 1991 and yielded a large number of "commingled" re-mains. Besides Vandegeer's resins, CILHI recovered what it believed to be remains from 10 Marine Infantrymen and two Navy corpsmen from the 2nd Battalion, 9th Marine Resiment, on board Vandegeer's helicopter, known as Knife 31.

The number of personnel involved in the crash, as well as the large number of bone fragments, "presented a challenge to the science.... The more reins you have at a site, the Ficulty goes up dramatically." Byrd said. Six Marines have

resources to tackle more complex tasks, sald Naomi Bloom. managing partner at human reidentifications of the two Navy

corpsmen are pending. Privacy statutes preclude Byrd from discussing individuals, but sources outside the U.S. Department of Defense confirmed the identification of Vandegeer and his burial date The lab tapped into the smarts of a forensic computer program developed at the Unisity of Tennessee, called ForDisc, which automates the process of matching skeletal remains, Byrd said. For Disc is based on an extensive skeletal

entists from CILHI to quickly determine the probability of whether a femur of a certain length matches a tibia of a certain length, for example. Recent new methodology extends that capability to bone This is a key piece of soft-

ware, because the CILHI scientists work "blind" when they begin analysis of skeletal re-

Central Identification Laboratory Hawaii Established May 1976, based at Hickam Air Force Base,

Oahu, Hawaii, Referred to as CILHI. Chartered to recover and identify U.S. MIAs from all wars. ntrating on World War II, Korea and Vietnam.

 220 personnel, including anthropologists and archaeolo gists, casualty data analysts and forensic ondontologists. Operates 13 field recovery teams, which this year have conducted 49 operations in Southeast Asia (Cambodia, Laos and Vietnam), eight World War II missions and six in North Ko-

rea. Field teams deployed on an average of more than 180 days ruter resources consist of 200 networked PCs booked into 12 servers on a 100M bit/sec. LAN.

Casualty database consists of records on 78,000 World War II MIAs, 8,000 Korean War MIAs and more than 2,000 Viet-

nam War MIAs, taking up 30GB of storage space More than 130 successful identifications of MIAs this year

WEB SITE: www.cifii.army.mil

thorities then spent nearly one year confirming those results sources said. CILHI's computer and com-

munications support is provided by Resource Consultants Inc. in Waipahu, Hawaii. The records of the missing servicemen from three wars, as well as data related to recovery operations such as maps, aerial photographs and scientiers' field notes, currently occupy 30GB of storage space, on-site con-sultant Gary Stephens said.

A gradual thaw in U.S. rela

terms, restorations and extractions with North Korea has resulted in an increase in recovery missions in that country. said Stephens, and the command has started a crash imaging project to scan into a database literally millions of pages from the records of the Korean War MIAs, a project that in its infancy has already cor 39GB of storage space

"I believe what we do here is meaningful to the American people, especially the families [of the men missing in action]." Byrd said.

Dan Verton also contributed to this story. Brewin, Computerworld's wireless and mobile reporter, landed in Da Nang, Vietnam, with the 2nd Batto ion, 9th Marine Regiment, on

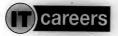
Their technology is

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> In fact, pretty much the only thing that isn't fast is this ad.

crosoft SQL Server 2000. Okay, that headline took awhite But that's only because there are so many build-faster deploy-faster manage-faster improvements in SQL Server 2000. Improvements like rich XML

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Feds Step Up 'Revolutionary' **Ouantum Computer Funding**

Development years away, but warnings raised if U.S. lags in computing research

REPARING FOR AN ventual post-siliconchip world, the U.S. is increasing its research spending on uantum computers and other advanced computing alternatives. But foreign governments are doing likewise, and a race to develop new technologies

- potentially raising profound implications for computer security - may be beginning. An award of \$90 million in grants for technology-related

research by the National Science Foundation (NSF) last onth included as much as \$8 on for quantum computing. which relies on the behavior of subatomic particles and theoretically could increase processing power exponentially The quantum computing research grants are part of a new "revolutionary computing" re-

search effort the NSF is funding. Five years ago, overall feder al support for quantum computing was just \$1 million per year. The annual spending figure is now at \$30 million, accontinue to the NSE

The interest in quantum computing is being spurred, in part, by technical limits in existing chip-making material and fabrication equipment that ultimately could nullify Moore's Law, the famous 1965 prediction by Intel Corp. co-founder Gordon Moore that computing power would double every IS

other 10 to 20 years But the creation of new technologies such as quantum computing will take an enormous basic research effort. said Charles Bennet, a research scientist at IBM, who testified during a hearing held here last month by the House Subcom-

mattee on Basic Research. This is a 'time of exceptional need for ingenuity and basic science, because the thirst for progress and for better computational informational process ing ability will not dry up."

At the bearing, scientists urged more investment in these areas. Japan is investing about half of what the U.S. is spending on quantum comp ing, scientists noted, and funding is on the rise elsewhere. We are not unquestionably the world's leaders" in quan-

tum computing research.

The Next Lean

HOLECULAR COMPUT

warned Timothy Havel, a lecturer on biological chemistry and molecular pharmacology at Harvard Medical School in Cambridge Mass

In quantum computing, a single subatomic particle could represent both a zero and a one, a simultaneous state that may make huge increases in processing power possible As envisioned, quantum computing will have enormous potentially to break codes.

National security and the secure functioning of e-commerce transactions are both "dependent on the fact that certain Jencryption] codes work," said Richard Lipton, a Princeton University computer science professor who's currently on leave to work at the Georgia Institute of Technology in Atlanta, But that could be jeopardized if another country "secretly discovered a way to build a quantum computer and just didn't tell "They would be reading all

us," he told the subcommittee our mail, reading probably all the military's mail and the like. This would probably not be good," said Lipton.

months. Most experts say those **DOJ Signs Up Team to Review Carnivore**

Surveillance system to be checked by Illinois researchers

In an attempt to address the privacy concerns surrounding the FBI's controversial and secretive Carnivore e-mail surveillance system, the U.S. Department of Justice last week announced that it has chosen a team of researchers affiliated with the Illinois Institute of Technology in Chicago to carry out a promised technical re-

The DOJ said the team from IIT Research Institute (IITR), will be paid an estimated \$25,000 to determin ther the computer-based investigative tool contains ough safeguards to ensure that it doesn't invade the privacy of individuals who aren't being investigated by the FBL The ntract signed last week by the DOI and IITRI specifies that

based on the time and materials needed to carry out the review. IITRL a not-for-profit research and development organization, will review Carnivore at a research facility that it opcrates in Lanham, Md. The DOI said the review will

begin immediately and is scheduled to be completed in December, after which a report will be made available for public comment. An interim deaft report is due to be released in

The DOI in August issued a equest for proposals from universities interested in examining the Carnivore technology after privacy groups charged that the surveillance system could be used to do widespread monitoring of e-mail ssages on networks operated by Internet service providers. Government officials said they hope that the independent review will head off calls for the FBI to release Carore's source code, which so

AT A GLANCE Carnivore's Controversial History

for Internel service provider Earthiesk Inc. testries to the House Judiciary Committee arding concerns over the system July 12 The Electronic Programment Center (EPC) Nes Freedom of Information

July 24 The House Judgary Subconner ter holds heavings on privacy concerns our Aux. 2 FPC artic a larged extrests force

FRI to release education on Currence Ann. 9 The FRI set on the mineral extreme ton on Carrivore, saying it would compromor law orligionest efforts. Sept. 28 The Justice Department chooses

the ET Research Institute to conduct a review of Carrysons that the FBI will then edit.

far has been kept secret The review is subject to ome restrictions. For example, the DOI has said Carni-

vore's source code won't be published as part of the report. and the agency will be able to edit the document. Those con ditions spurred some universi ties, including MIT, Purdue, Dartmouth College and the Supercomputing Center at the University of California at San Diego, to withdraw from the review application pro-

Kerry M. Rowe, HTRI's senior vice president and manage er of its advanced technology group, said last week that he doesn't believe that the retions placed by the DOI on the research process will compromise the integrity of the data.

"The idea that the DOJ has the final edit does not both me," said Rowe. "That is the situation anytime you develop a report like this for the novment, and they have the right to do it. I have every expectation that this will be a full and open review and that all

the data we get will be available to the public." Rowe added that the DOFs ence on background checks for researchers on the eject is routine and the inclusion of a nondisclo-

ement barring discussion of the "means" by which the DOI conducts investigations is

also acceptable Critics have also conden the DOI's insistence on maintaining veto power over mem bers of the review panel not ing that the government could use this as a way to screen out researchers critical to govern ment surveillance. Rowe said be resents suggestions that the IITRI is incapable of conduct-

ing an impartial review. We are professionals and we will do a proper and open technical evaluation of this process, period," said Rowe. This is not putting a rubber stamp on something that we

FBI officials have argued that releasing Carnivore's source code for public review would leave the system vulner able to attack by suspects who are being targeted in criminal investigations.

Currently, Carnivore is installed by the FBI as a "black box" system that's attached to the networks of Internet service providers, which can't exne or access the system.



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Government Report Finds Few Y2k-Related Lawsuits

But pending claims could mean big awards

BY PATRICK PHIBODEAU die de m e mai rega ma

in his mards according to Prince F Webster, director of H. trons companies seeking reini ber. The legal argument is that neutance company should reinduse the owner for the s in this because its a cheap-

ming from it aren't. Ninety-five Y2k-related lawsuits were filed in federal ■ Damage claims from companies seeking reimbursement from insurers could seach \$1 billion

Software and hardware vendors defending them selves against end-user lawsults were the primary users of the federal Y2k Act.

Y2k Damages

The GAO report is available at www.pao.gov/new items/gg00196r.pdf. turns that have tiled too.

stills against insurers include GTF Corp. Kmarr Corp. Nike him in damage claims, and Webster D

Outsourcing Messaging Not an Option for Big Companies

ASPs can't match price, technologe

But on service of the state of

ensists and three large mark at the Electronic Messaging

The ASP model has been recently touted as a popular and affordable alternative for small and medium size companies But because mans large corporations like R R Donnelles. The Boeing Co. in Scottle, incl. Credit Sursee First Boston in

they are also maying roward or school messaging systems pened companies if they Ulark Forthman vice presi signing at Credit Surse, First Boston and that when he

norted in messaging for Zonah based purent company Uredit Street Group four years see its timous intits used 14

Travelocity, Galileo Bid for Business Travel

kisme ward Web sin. The national Inc. Jehnted Trivel

in reed effecting of Sabra Indocumber Worth and Menbe his told boot fattlers Inc. Its broking tools will al---- recterred arrive and three backing tools malable to the larger customers of Silve Set Phere

Krista Pappas, director of travel analysis at Gomez Advisors in, in I modn, Mass, and the Travelocity com mitiative makes sense in that morestructured systems will have difficulty reaching travelers in smaller corporations

Galideo's mone takes advan tape of its historical ties to brick-ind-mortar travel approsees. The agencies will now be

Non-there are only two, with used as the primary system private banking group It's an banking group. Luttman said, because the customers - individuals with vast wealth nord specific applications built on top of the core messaging

Richardson said that when Boeing takes over a company, that company must move to party software isn't allowed 1

able to provide their traditional over-the-counter service over Galilea's fiber-optic lines. Pappas said one of the chief difficulties in providing bear mand for customer service and the maintenance of long-term relationships - two areas in

crests pically excel-Framingham, Mass based International Data Corp. semor analyst Joshua Friedman released a report last month predicting that brick-and-mortar apencies will collectively dominate the market when they gain a preater amount of Internet says to mis with

their travel expertise #



Government Report Finds Few Y2k-Related Lawsuits

But pending claims could mean big awards

BY PATRICK THIBODEAU

NE OF the fears surrounding the year 2000 problem was its notential to result in litrostion regimes com-But in a report made public last week, the U.S. General Accounting Office said it has identified fewer than 100 federal and state lawsuits that have raised Y2k-related issues According to the GAO, only 18 of those suits involved provisions of the liability-limiting

bill passed last year by Congress. When that measure was being considered, some legal experts estimated a possible price tag of \$1 trillion in legal costs and damages stemming from Y2k-related suits. Concerns about out-of-control litigation prompted Congress to adopt the controversial Y2k Act, which set a mandatory 90day cooling-off period before any legal action could commence and restricted the use of class-action lawsuits, among

Harris Miller, president of the

sociation of America in Arlington, Va., said the intent of the legislation was to prevent an onslaught of groundless litigation and the dispersion of resources carmarked for repairing Y2k

problems to fight legal battles. That's what the legislation was all about," Miller said. "It wasn't probibiting anyone from going to court." As a result of the Y2k Act, he added. companies "didn't get sidetracked into a legal firestorm that would have benefited only

In its analysis, the GAO said most of the cases that were filed involved end users who had taken action against a

Nine of the Y2k lawsuits are from companies seeking reimbursement under an insurance clause known as "sue and labor." The legal argument is that if a company buys sandbags to protect insured property, the insurance company should reimburse the owner for the sandbags because it's a cheaper solution than paying for flood damage, he said.

upgrading existing systems.

to bear the cost of replacing or But pending Y2k legal claims still have the potential to result in big awards, according to Bruce F. Webster, director of IT Legal Systems at PricewaterbouseCoopers in Washingto

> Firms that have filed law suits against insurers include GTE Corp., Kmart Corp., Nike Inc. and Xerox Corp. In total, they represent nearly \$1 billion in damage claims, said Wahrter &

different messaging systems. Now, there are only two, with Microsoft Corp.'s Exchange used as the primary system

and Lotus Notes used for the

private banking group. It's an

effective arrangement for the

banking group, Loffman said

because the customers - indi-

Outsourcing Messaging Not an Option for Big Companies

ASPs can't match price, technology

BY JENNIFER DISABATING SNOWERD USED

Big companies aren't likely to outsource their messaging systems anytime soon, because they have better technology at a more affordable price than any application service provider (ASP) can offer them.

That was the message from adjusts and three large users at the Electronic Messaging Association conference here earlier this month.

With outsourcing, "yo ipment's held hostage very simple," said Al Petras, director of information technology at R. R. Donnelley & Sons Co. in Downers Grove, III. ur equipment's got a blindfold around it and a rope around it, and there's a gun to

The ASP model has been recently touted as a popular and affordable alternative for small and medium-size companies. But because many large corpo-rations like R. R. Donnelley, The Boeing Co. in Seattle and Credit Suisse First Boston in higger than, the ASPs that offer outsourcing services, they have the finances and staffing to support messaging systems

other provisions.

"Nobody's been able to match the price that we're getting (for in-house maintenance and support]," said Dean Richardson, a senior systems analyst at Boeing, "We'd have to he doing either a really had job or he really expensive dothe management of their mes-

Announcements last month by Circuit City Stores Inc. in Richmond, Va., and Columbus. Ga.-based insurance company AFLAC Inc. highlighted some of the attractive qualities of outsourcing for a specific and limited use. Outsourcing messaging, particularly Web-based

e-mail is quick and scalable But the corporate users here said they not only want to keep

they are also moving toward standard messaging systems across departments and acquired companies, if they haven't already done so. Clark Loffman, vice presi-

dent and head of global messaging at Credit Suisse First Boston, said that when he worked in messaging for Zurich-based parent company Credit Suisse Group four years

viduals with vast wealth need specific applications built on top of the core messaging that company must move to the Boeing standard, and thirdparty software isn't allowed.

Richardson said that when Boeing takes over a company,

Travelocity, Galileo Bid for Business Travel

Two travel services Web sites are taking steps to get business customers to make their travel plans online. Travelocity.com Inc. last

week opened a business travel section on its market-leading leisure travel Web site. The move came the day after Rosemont, Ill-based computer reservations firm Galileo International Inc. debuted Travel-Galileo.com, which will put brick-and-mortar travel agencles online to service business

and leisure customers.

has been percrived in the travel industry as a gap in online business-travel services. At the recent eTravelWorld Conference in Orlando, analysts said few companies use

online booking tools, so the market for such services remains wide open. Fort Worth, Texas-based

Travelocity.com, the biggest player in that space, is the merged offering of Sabre Inc. also in Fort Worth, and Menlo Park, Calif.-based GetThere Inc. Its booking tools will al- cies. The agencies will now he

cess preferred airline and group booking tools available to the larger customers of Sabre/GerThere.

Krista Pappas, director of travel analysis at Gomez Advisors Inc. in Lincoln, Mass, said the Travelocity.com initiati makes sense in that morestructured systems will have difficulty reaching travelers in

smaller corporations. Galileo's move takes advan tage of its historical ties to hrick-and-mortar travel agen-

ble to provide their traditi al. over-the-counter service over Galileo's fiber-optic lines. Pappas said one of the chief difficulties in providing busi ness travel is the increased demand for customer service and the maintenance of long-term nships — two areas in which brick-and-mortar agencies typically excel.

Framingham, Mass-based International Data Corp. senior analyst Joshua Friedman released a report last month predicting that brick-and-mortar agencies will collectively dominate the market when they gain a greater amount of

Internet savvy to mix with their travel expertise.





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Source IDC, December 1996, Who Hill be Leading the Globel IT Services Industry in 2000? A Competitive Analysis by Mauric Press, Signine James Masio

Texas Attorney General Sues to Stop Living.com Data Sale

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In a pre-emptive nove aimed
In a pre-emptive nove aimed
It is customer data as part of suit apparent the company and a
interest of the control of the cont

nancial data that Living.com collected - such as creditcard, bank account and Social Security numbers — would be destroyed under the supervision of the Austin, Texas-based company's court-appointed bankruptcy trustee.

The trustee could then sell or transfer the customer list, hat only after notifying all of Living.com's customers of the proposed sale and giving them the chance to have their remaining information deleted from the list. The settlement still has to be

approved by the judge overin U.S. Bankruptcy. Court in Austin. Texas offi-

cials said the lawsuit and the TEYAS ATTOR settlement deal weren't filed in response to

nov proposal by the retailer, which shut down and filed for bankruptcy protectioo in August

But Hal Morris, an assistant attorney general in Texas, said Cornyn's office has followed the bankruptcy case closely since Living.com went out of business. Cornyn's office wanted to head off any possible sale that wouldn't conform to the company's privacy policy, which promised that customer data wouldn't be shared or sold

without their consent, he said. The attorney general contacted Living.com's lawyers right after the bankruptcy filing. "This is an important issue," Morris said, noting that Cornyn has also been involved in efforts to block the sale of customer data by defunct online toy store Toysmart.com

Inc. in Waltham, Mass. Living.com retained the right to share data "with trustworthy third parties," but its policy said customers could opt out of having their information shared. Company officials couldn't be reached for com-

meot at pres Stepheo Keating, executive director of the Privacy Foundation, a privacy organization in Denver, said such enforcement actions are good for online shoppers. In the Living.com case, Keating said, consumers were put first [so] that their data won't be used without their permission **



ver wonder how those who have all the answers?





office romance

When you're the boss, work can be as personal as you want in to be ignire more than an independent professional, you're a guit. And whether you're a market research specialist, multimedia, designer, or anything in between, now you have a resource on the web. A helphul place to choose from a winety of contract projects, as well as to market yourself to lots of great companies.

wer for the independent professional



Lineo in Pacts With

Motorola, Samsuno edded Linux vendor Lines Inc. ounced two major deals last k - s \$22.5 million investme

from a subsidiary of Schaumburg. ola Inc. and a joint venture tronics Co. in the Motorois deal will provide open-source rology and its embedded Linux plications for use on Motorois ps. Linden, Utah-based Lineo will p embedded Linux systems use in Sammono's devices.

Novell Announces Alliance With Red Hat

(Interop last week that it with Red Hat Inc. in Durham, N.C. Novell CEO Eric Schmidt said Red Hat has selected Novell Directory es eDirectory and Novel's

Microsoft Changes Reporting Categories

cal year, increasing the lines of es from three to live. The by will split revenue into the lowing categories: deaktop soft-re, orderprise software and serner software, services

Short Takes

ming, M.Y.-based CORNING INC. has agreed to buy the fiber-optic di-vision of Milan, Raly-based PIRELU SPA for \$3.0 billion and will purfirect PC sales in India last mon

Intel Battles on Legal, **Financial Fronts**

Despite recent headlines, analysts

BY HATHLEEN OHLSON HE LAST weeks have been escentful locally and financially for Intel Corp., whose stock continued to drag last week on Wall Street though an-

alysts said they saw no long-The Federal Trade Commission (FTC) last week closed in investigation into Intel's business practices. Meanwhile,

rival chip maker Broadcom Corp. in Irvine, Calif., asked for a preliminary injunction to cease Intel chip sales, alleging that Intel has used Broadcom technology to accelerate development of its own products. Intel originally brought a suit against Broadcom in

revised third-quarter sales prosay leading chip maker is still strong Intel said sales would be 3% March, charging the company

to 5% higher than the secondquarter figure of \$8.3 billion with accessing Intel's trade Wall Street expected an insecrets through former Intel crease of 12% to 15% and punished Intel by dropping the Last week's developments company's stock price from

come on the heels of Intel's

Ups and Downs for Intel

Sept. 21: Intel sours a mysed third quen ong 3% to 5% growth. Wall Street analysis expect 12% sales growth for the find quarter listel also cad to gross mangin will be close to 62%, a not lower than the previously expected 63% or 64%.

Sept. 22: Wel Street greets the revised projection by dropping the stor price from \$61.48 to \$47.94. The price has since howered in the med-\$40s. Sept. 25: Dip that Breadcom Corp. Nes a preiminary injunction against intel, seeking to hall little's chip sales and alleging that little used

paragram chaps to accelerate development of its own products. The injunction is the latest legal shot between the companies since March Sept. 26: The Federal Trade Com

mion closes its three-year case lel involving its business practices

\$61.48 to \$47.94 in next-day trading. The stock was still trading in the mid-\$40s last

But analysts said they are still confident about Intel's future, "There's nothing wrong with Intel," said Jay Patel, an analyst at The Yankee Group in Boston. These issues won't be a distraction for Intel, "and they'll be behind them fairly soon "Patel said Analysts said the FTC's de-

cision to close its case is positive for Intel. The Broadcom case "will eventually have an out-of-court settlement," pre dicted Tony Massimini, chief technology officer at Semico Research Corp. in Phoenix. "They'll agree on something out of court. It's not worth paying the lawver fees.

Chuck Malloy, an Intel spokesman, said Broadcom's assertions of stolen trade secrets concerning several Intel products, including the Media Access Controller chip, lack merit, which will be proven in court. Bill Blanning, a Broadcom spokesman, said the stolen trade secrets were proven true during the discovcry process.

Win2k Datacenter Depends On Unisys at the High End

If the Windows 2000 Datacen

ter Server operating system that Microsoft Corp. formally announced here last week is to lesp into the highest reaches of corporate data centers, it will be Unisys Corp. - not Microsoft - that will be iumpine many of the burdles facing the new software

Blue Bell, Pa-based Union ES7000 server is the only system currently available that's ready to take advantage of the 32-processor scalability built into Windows 2000 Datacenter

But Unisys, which now procrates about 70% of its revenue from services, could have trouble "getting the mind share of CIOs" after doing a poor job of selling machines beyond its installed base in recent years. said fim Cassell, an analyst at Gartner Group Inc. in Stam-

vendors' help to get widespread attention from information technology executives for the ES7000, Cassell added. For example, as part of Microsoft's Enterprise 2000

Launch event, Hewlett-Packard Co. and Unives last week announced that HP will join Compaq and ICL, a Slough England-based subsidiary of Tokyo-based Fulitsu Ltd., as ES7000 resellers Peter Samson, a Unisys vice

president, acknowledged that the comeany has been focusing mainly on its installed base of computer users. But being the only 32-way game in town should be a boost for the company, Samson added, claiming that ES7000 orders have already increased 120% in the third quarter compared with

said he's looking at consolidating other the first half of this year. applications on the One new ES7000 user is machine - a move WorldTravel Partners, a \$3.5 that would expand

billion corporate travel service in Atlanta. The company has built an internal data warehouse on one of the Unisys machines running Windows 2000 Advanced Server and Micro- tion.com Inc. in Garden City. soft's SQL Server 7

database, Lloyd Marino. WorldTravel's Server vice president of IT, said he's ready Options to upgrade to the Windows 2000 Dat-

cially with its relia-

it, and it still runs."

Hardware choices acenter operating for Microsoft's highsystem and a new end operating system companion SQL 32-WAY SERVERS Server 2000. Marino said he's pleased with the wiett-Packard Unisys server's performance and espe-

ICL (Fujitsu) bility and scalabili- a Usernourced ty. "You can literally put a bullet through 8-WAY SERVERS Compaq a ProLuct 8500 be said. The ES7000 is equipped with only 12 processors Dell now, but Marino

PowerEdge 6450

the number of processors. "It's not even sneezing at the load

we're putting on it now," he Joe Mohen, CEO of Elec-

N.Y., said he plans to use a Compaq-AT A GLANCE branded ES7000 loaded with 32 processors and 32GB of memory to handle the peak loads of the online elections that his company conducts. For a national elec-

tion. Moben said that could mean processing up to 6,000 votes per second with full encryption and votes authentication ca-

Microsoft has a lot riding on the Unisys machine, said Cassell. *If Microsoft's going to be successful [at the enterprise level), they need a

frame, and this is it." he said.

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MARK HALL

Long live B2B!

PESSIMISTIC MOTHER is quick to remind me that her philosophy began before President Woodrow Wilson was fruitlessly flogging the League of Nations. Some say it was the Senate's blocking of U.S. entry that caused Wilson's stroke. If he had been a

pessimist. Mom reasons, he would never have been so disappointed, with such dire consequences.

Like my venerable mother, many IT executives think pessimism is the key to long life. Recent news trends certainly seem to support their innate doubts about business-to-business projects. The latest in many a dour story about B2B exchanges appeared first last week on Computerworld.com, Carol Sliwa reported that retail exchanges, once flush with optimism about becoming the efficient clearinghouses for billions in pass-

through dollars, have deflated Not since, well, B2C have IT managers suddenly questioned the very notion of a big-ticket IT-led project. It isn't just that a B2B program with substance and porpose is difficult - most IT work is complex. Rather, B2B has gaping

boles in it, pessimists proclaim. For example, some exchanges can construct limited, company-specific auctions. But you can forget about ad hoc purchases for the billions worth of specialty gear that most companies need. Oh, you want to include the full breadth of international suppliers today? Dream on. And don't even think about adding your partners who finance or insure your real-



supply chain.

There are so many B2B ouzzle pieces missing, it's little wonder pessimism is elbowing out the upside thinking on R2R With all due respect to dved-in the-wool pessimists like my dear mom, you'd be foolhardy indeed to

world deals as part of your virtual

wait on the sidelines as the B2B phenomenon takes off. And it will fly. Long and far, too. That's because it's too logical oot to succeed. Beyond simple logic, there is

compelling evidence. In MetaCopitolism, a new book by Grady Means and David M. Schneider, the two managing partners at PricewaterhouseCoopers detail both why and how B2B will increase the value of capital markets from \$20 trillion today to 10 times that in eight to 10 years.

With B2B, the authors argue, companies can redefine their business processes so that non core products or services get outsourced. This frees corporate capital to augment and expand essential revenue opportunities. Any IT team that drags its feet oo B2B will go down in flames, they warn.

Perhaps the pessimists should worry after all. Now I have to break the news to Mom. 9



DAN GILLMOR

Peer-to-peer computing: The next IT tsunami?

DEER-TO-PEER computing, which is all the rage lately among some IT cognoscenti and much of the media, is being compared to the ill-fated "push" craze a few years ago. Don't make that mistake. Push was an interesting idea that never lived up to its hype. Peerto-peer (P2P) is going to change things

in a big way. Don't make the mistake, either, of thinking of P2P only in the Napster context. Yes, file sharing is an enormously valuable component of the P2P genre - though the cotertainment industry's para-

noid reaction could damage the most promising computing architecture in years. But file sharing isn't

the only promising use The basic notion of P2P is that two computing devices (peers) share their information and brains with each other. With Napster and many other peer-to-peer technologic the desktop machine cor tains a server not inst a

client. It may be a mini server designed to send out limited kinds of da but it's a server nonetheless.

Servers can be peers. The domain name system, which lets computers find one another on the Internet, is a group of servers peering effectively with one another. Devices can be peers, and as we connect a billion devices to the Internet,

we'll have no choice but to use P2P. But P2P has also been defined to include some fascinating projects in distributed computing where we use some of the power that typically sits idle on PCs around the world by breaking up big-number-crunching problems into small pieces. Many volunteer, nonprofit projects are in the works, but several for-profit companies have

sprung up to take advantage of this notion, too. Another P2P use that has gotten lost in the Napster ooise is what we might call the "readand-write Web." The Web has been turned principally into a read-only medium, but it wasn't designed that way. New products allow people to write online from inside Web browsers, saving

their work directly on the Web The real excitement, though, is in what's yet to come. At a recent meeting of P2P leaders in San Francisco, a representative from Intel, which is moving into P2P io a big way, offered some intriguing suggestions. For example, he said, peering computers might watch one another's backs

NEWSOPINION

from a security standpoint. Or a company might be able to distribute multimedia training materials more efficiently and cheaply if it didn't have to set up powerful servers all over the world. The possibilities are literally endless.

IT people will be forgiven if they groun at this point. Client/server and network computing are hard enough. Now comes a whole new architectur But the potential savings and utility are enormous. P2P is for real. We will dismiss it at our peril.

IOHN GANTZ The things that

make e-business managers tick

FEW MONTHS ago, I wrote about the personalities of successful Le-business managers. They're like those of most IT professionals: aggressive, willing to take risks and optimistic.

Now that you've all been to your shrinks or commenced a regimen of mood-altering drugs and are ready to be e-business execs, let me tell you a little about your new persona. This analysis is based on information I released at International Data Corp.'s Internet Executive Forum 2000 from surveys of U.S.

mmerce managers conducted last month To begin with, more of you are women (about 45%) now that you're in the ranks of business mar agers and not IT professionals. You're also young (average age: 42), but not too young. Most of you work in brick-and-mortar companies, after all. Even those of you in dot-coms that sell only over

the Internet are older than 35 on average, although almost a quarter are younger than 30. And you're educated - about

two in five have advanced degrees. What kind of television shows do you watch? Wow, what a serious bunch! Seventy percent primarily watch news, while only 25% watch sitcoms. One-third watch sports (the men?), but almost half watch documen

taties. For outdoor activities, your interests are all over the map, from auto racing to tai chi, but as many of you bike as play golf (28%), and one quarter of you jog or run. Only one in 25 does nothing

But what most surprises me is what motivated you to take your new e-business positions. It ain't money. Only 60% of you got raises when you got your jobs, and 25% actually took pay cuts (although those who did get raises averaged increases of more than 30%). And only those of you who moved into pure-play dot-coms - about 10% to 15% of all e-business positions - got any equity worth speaking of.

But get this: Your No. I motivation - out of a list of six reasons - for taking the position was intellectual stimulation. Salary and bonus placed fourth, right after the chance to be a pioneer and a part of the Internet revolution. The opportunity to own a piece of the company was dead last,

even among those who got it. There's good news for your employers: Only 6% of you expect to change jobs more than once every two years - although you average five offers or recruitment calls a year. The bad news

may be this: 80% of you have no experience in the You do, however, have expectations of financial reward; you're looking for income growth of more

than 45% in the next two years. And while only 18% of you have a net worth of more than \$1 million, twice as many expect to be in that camp in two years. (Did I mention that Internet executives are optimistic?)

For companies wishing to hire or hang on to you, there are some clear messages in all these statistics. As the e-business job market swells. more of you will come from nontechnical or In ternet-related backgrounds, and you'll be as motivated by the challenge of making something happen in the online world as by cash. You entered your new assignment to be part of the revolution. But you'll he new to the assignment and will need some room to operate. In fact, our panelists liberally used the word freedom to describe why they have the jobs they have Go get 'em, tiger! !

Lack of knowledge hinders programming hires Asa LAN ad

ware to purchase. I do

as a closet geek, I am

how CASE tools were

going to make program

mers obsolete. And in

was one of your other

who wrote The Rise and

Fall of the American Pro-

grammer, only to follow

it with The Rise and Res

arrection of the American

WHILE I.
my best inter
ests as a programmer to restrict the

supply of talent, I simcannot agree with the commonly cited statis tics about the buge num ber of rejected applicants for programming jobs. If you have ever tried to hire programmers. you will have observed that the majority of peo ple brought in for inter-

views do not have the To focus on work, escape corporate life

FTER spendir years at a Fortune with responsibilities for several large product launches and campaigns my advice to e-business project managers is to get the heck out of the corporate office ["Success in E-Projects," Bu ness Opinion, Aug. 217.

Take one or two vision ary senior executives an your techies who have creativity and openness to an off-site location to get focused for hard erk. You have to hide out and build conser with the right people if you want to get anythin

Terry Tocti

alent to handle the job. I'm not talking about a consider memory footlack of currently hot print and code size. But skills such as lava or C++ I mean allegedly experithrilled to see some cre enced people, sometimes with master's degrees. who cannot answer sim ple questions from un-dergraduate computer pride enough in their work to sign it. science courses Jeff Shehar The claim that come Chrcago

nies should train new hires in the required Dark days of IT not skills is also absurd. In the current job market. quite upon us vet that employee will be gone in a year and a half. S ONE of the tech-A solve or the war nologists on whom the sky just at the point when he or she is up to speed on the new technology. A will shortly fall. I differ programmer could pain a with the opinions of th superficial knowledge of "futurists" in the Sent. 25 C++ in "a matter of article "Darker Days weeks," as Norm Matloff Ahead* for IT [Business] es ["Should the Ten years ago, we heard

H-IB Cap Be Raised? Special Report, Aug. 281. but true proficiency takes much longer than Steven E. Ban Mitpitas, Calif

the Commuter world article on "Easter Eggs" [Tech-

While I do riot advo cate sitting on one's technical laurels, there are a host of reasons why I do nology QuickStudy, Sept. not think these predic INI. it ended on a neer tions will come to pass. tive note, mentioning Not all companies are what we all pay in code willing to ship their trade out, memory consum secrets overseas for a tion and time-to-market. fleet of programmers to

rifle through. And while who decides which suit the labor pool of pre grammers likely will grow, the very skills that the article notes will be in demand - i.e. soft, nontechnical skills - are the ative originality by overones recent college grad worked developers in the nates have the least of. software shops who have Matthew E. Ferris Wheaton, III

> Cultures can choose but not all choices pay

in the Sept. 18 is-suc, expresses concern over the poter tisl for "cultural pollution" [Readers' Letters] I agree. Any culture should be free to choo whether to accept the advances of IT. But any culture that chooses to forgo those advances in the name of "cultural purity shouldn't expect to share in the wealth generated by these advances. You can't have it both ways.

Reigh Mace

RI troow

More Letters, page 38

COMPUTERWORLD welcon i offers will be existed for broads. and clanty. They should be addrested to Jame Eckle, letters editor, Computerworld, PO Box 9171, 500 Old Connecticut Path. Framingham, Mass. 01701. Fax (506) 879-4843, Intern letters/scomputerworld.com

BARBARA MYLES

Message to ASPs: Regulate, or be regulated

THEN APPLICATION SERVICE provider (ASP) Pandesic announced in July that it would shut down, it sent a shock wave through its customer base. Its decision left more than 100 Pandesic customers needing to find new ASPs, negotiate new servicelevel agreements (SLA) with them and pay vendors to move their data to the new ASPs, causing these customers a lot of pain and lower profits.

Companies beset by the IT skills shortage and the increasing complexity of administering software applications have turned to the relatively new world of ASPs and

negotiated SLAs with them. The ASP Industry Consortium's "Application Service Provider Buvers Guide" recommends that SLAs include provisions for data and system security, customer support, system performance measured in response time. system availability and enforcement provisions. It's each company's responsi-bility to check out the ASP

it wants to do business with and negotiate the best SLA for itself. The ASP's service must be dependable enough so that its customers don't experience any drop in performance.

Pandesic's owners, Intel and SAP, decided to shut it down because profits were low. But what does this say about the value of SLAs? If ASPhave major problems, the SLAs aren't worth much. Each of Pandesic's customers had an SLA with Pandesic, but the SLA can't force Pandesic to stay in business or pay the costs of transferring

customer data to other ASPs. As more companies sign on with ASPs, there will be increasing demands for more stringent SLAs and government regulation. Companies need a safety net when ASPs fail. What's needed is an industry-based oversight body that will force the ASPs to meet certain functionality and quality requirements.

ASPs have been compared to banks because a company's data is very valuable, and the company trusts the ASP to keep its data safe and pro-vide experts who have experience supporting and managing the applications. But there's no standard for what an ASP must provide to its customers. The service parameters are decided

by the IT, marketing and legal departments of both companies involved in working out an agreement

ASPs should learn from the experience of the

direct marketers. Self-regulation concerning privacy of customer data didn't work. Now. Congress is considering laws to protect the privacy of individuals while they're on the Internet, and violators could suffer criminal penalties.

It's not enough for a software vendor to approve of several ASPs to host its applications, because the vendor doesn't assume any liability if these ASPs fail. If the ASPs don't form a regulating group that can step in during crises to protect business data, it's only a matter of time before the

federal government becomes involved A representative group of vendors whose software is commonly hosted by ASPs should begin working with successful ASPs and their our tomers to determine the essential qualifications. ethical responsibilities and requirements of ASPs and how to certify or license them. The group should also draw up penalties such as disburring and fining ASPs that don't meet these standards. The primary benefit to ASPs that meet these requirements is that companies will be more willing to do business with them.

BILL LABERIS

Three firms make good cases for CRM tools

TINTERNATIONAL DATA CORP. says U.S. businesses will spend nearly \$12 billion on customer relationship management tools (CRM) by 2002. Big business is throwing

immense technological resources at getting close to the customer the way a hermit crab gets close to

a snail shell. It's not only big business getting into the CRM act. I recently visited Azillion. an Austin, Texas-based firm that's aggressively marketing a highly touted

CRM product for smaller businesses. Team Lynch, a small Cincinnati realty company, has claimed that customer referrals, a key measure of cus satisfaction, jumped 70% after deploying it.

Aimost every company has gone full bore into customer care. But even as I write this tens of millions of dollars worth of CRM products are going for naught because so many companies fail to grasp a fundamental truth: CRM is not about technology: it's a state of mind. There are excellent CRM tools available to attack long-standing customer issues. What is lacking is an empowerment of people up and down the enterprise to point out the obvious places where these tools could be deployed.

Consider the following examples of customer relations in action:

A long-distance phone company approached a business user with a discount rate offer better than the rate bis business already had from another provider. The customer called bis provider to inquire about the upstart. The customer service representative warned the customer that upstarts are free to change rates at will, usually upward, to eventually earn a profit, while selling initially at a loss. The customer then inquired about his own long-distance rate and was quoted one 50% higher than what he thought he was paying. "We had a rate increase in July," be was told. Said the obviously embarrassed customer service repri tive, "In your state, we are not compelled to tell you of rate increases." A CRM tool could have easily informed the customer of the rate increase, thereby helping the company keep the customer - who has since changed carriers.

In another case, a business customer held significant funds in a money-market account of a bank that was acquired earlier this year by anoth-er bank. The customer had routinely made phone transfers to his checking account from the m market account. But when he tried to do so after the takeover, he was told the following: His money market account had been switched - unbeknownst to him - to a money-market fund with the acquiring bank; the bank needed mo-

"proof" that the person calling in the transfer was who he said he was, despite his answering all the password questions correctly; and if the customer wanted to get at his money, he would first need to get his lawyer to write to the bank proving that the customer was who be claimed he was! A CRM tool could have placed this customer automatically in a group that, at the very least, could have

triggered a phone call from the bank, informing the customer of the pending chan

Then there's the frequent-flying businessn who arrived breathless at the gate 10 minutes before departure. The gate was still open, and the ground staff hadn't yet begun boarding standby Ample seats were available, but the frequent flier, bolding a paid first-class ticket, was told that the standby fliers "had been waiting a long time. and you are late." He couldn't board and missed his connection home. The simplest of CRM database applications could have tagged the flier with a status that would have marked him as a valued customer and sent him speedily to his next connection. Now he has a new first-

choice sirline These stories are true, since I was the costomer in each case.

CRM is a state of mind, something that escapes many companies. For CRM to work, it has to focus singularly on one thing: the customer's pain. Deploy customer management tools at your own convenience, and that's just what you'll cause. pot allay.



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. Make your business mobile

can help isiness m rks to mob data and v vices. We'r how to m as you just

ohile husiness

Microsoft unfairly blamed for Web bugs problem

cle "Privacy Group: Web Bugs Can Track

AVING READ the arti- Microsoft Documents" [Compaterworld.com, Aug. 31]. 1 have to complain that the man-

ner in which this information is presented clearly attempts to place blume on Microsoft for this situation. That is completely unfair. Even though you eventually quote a Micro-

soft response, and an agreement from the original source, that this is not a Microsoft issue, you only do so after you have presented the entire story as a Microsoft problem. Micro-

soft has done more to make computing useful, and to enable world-changing capabilities, than any other company or group of people in this industry, and although they certainly have created some of their own problems, they don't deserve this kind of treatment.

Practice manager Solutech Indenapolis

IT association to be recognized as 'Champion'

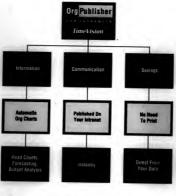
"D LIKE TO inform Computerworld readers and all members of the Association of Information Technology Professionals (AJTP) that the association was selected for a Champion of Industry award as a leading IT profes sional association. This bonor was awarded by Pat Summerall's Champions of Industry television series. This prestigious corporate recognition series highlights companies and organizations that are stars of their industries through product or service innovations. AITP National President Donny Wall will be featured on Fox News Cable Channel on Oct. 19 between L30 and 2 p.m. EDT in a seement narrated by Sums Linda Clark AITP

Park Ridge, III.

Secret' ad best kent hidden

S A longtime reader. I A sen disappointed in your decision to allow the advertisement for Data Return/Victoria's Secret in your Sept. 4 and Sept. 18 editions. It makes me quest' n your posttion with regar. ... women in technology. I wonder if male readers would be offended seeing a man in a G-string selling a router. Christine Wagner State College, Pa.

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Value and Business Wealth in the Internet Era the Line in the Internet Fra

Peter Keen advises leading edge eCommerce companies. In addition, he has taught at Harvord, MIT, and Stanford Universities. In 1994, he was profiled by Forber magazine as 'the consultant from Paradite.' Mark McDonald is an associate partner and director of Andersen Consulting's Centre for Process Excellence.

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Executive Insights on Content Security:

Proactively Addressing Potential Liabilities in the New Economy



Executive Insights on Content Security:

Proactively Addressing Potential Liabilities in the New Economy

uring the first half of this year, a number of high profile incidents were featured in the media which detailed malicious intruders sabotaging Web sites. Widely recognized names such as eBay. Amazon.com and E*Trade experienced significant downtime costing millions of dollars in lost revenue. Because of these incidents, security has become a major concern for every top-level executive whose business is

increasingly dependent on e-commerce

However, information security is not limited to e-commerce. It is also relevant to all Internet activities including e-mail and Web browsing. As more businesses provide Internet access to employees, content security and the potential lia-

bilities surrounding unrestricted access are being discussed in executive boardrooms Issues Business Executives Face

Emerging technologies and the internet are designed to allow businesses to be more productive and efficient. Email is the most widely used means of business commu-

nication, both internally and externally, because it is very intelligible and only requires a computer with a simple mail program and an internet connection. The internet has proven to be an evolutionary tool to gather competitive market information, prospect for sales leads, attract new customers, build stronger relationships with existing customers and suppliers and develop new distribution channels. These technologies also expose companies to an entirely new realm of liabilities and vulnerabilities.

By Richard Dean, Program

Mannet, and Allan Carey

in a recent study conducted by the American Manage ment Association (AMA), 64% of employees, on average, have access to e-mail. E-mail penetration has saturated the enterprise market while opportunity for growth still exists in the small to medium sized business markets. With e-mail access literally at their fingertips, employees can correspond with friends and family aside from conducting their regular business activities. Of course employees can also receive e-mail from any source through the Internet.

When an unsuspecting employee opens new e-mail. it can be like opening Pandora's box. For some backers, email is their transport vehicle of choice to hide worms. viruses and malicious mobile code (MMC). There have been numerous highly publicized cases including the "I Love You" bug, its mutant strain "Love Letter", and the infamous "Melissa" virus. By using a Trojan horse techrique, hackers can gain access to the vital corporate infrastructure allowing vicious programs to wipe out hard drives, attach themselves to stored e-mail addresses and forward themselves to other unsuspecting recipients, and cause mission-critical data to be lost. The ramifications can be devastating. Estimates suggest that viruses alone have caused worldwide damage reaching \$11 billion due to lost employee productivity, downtime and data loss.

According to the AAIA report, 48% of employees have access to the Internet Apart from conducting business activities on the internet, employees have the freedom to browse their favorite Web sites, shop online and conduct personal financial transactions. These are the types of activities that can cause valuable and costly bandwidth to be consumed.

Other temptations of the Internet include pornographic sites, racially discriminatory sites and other pitfalls that can expose businesses to a multitude of legal habitities. Underscored by the recent dismissal of dozens of Dow Chemical employees, companies are taking a no-tolerance posture involving the sending or storing of pornographic or violent e-mail materials within the workplace. Since July. Dow Chemical is reported to have terminated or disciplined nearly 300 employees for violating company policy regarding obscene e-mails. Prompted by an employee complaint. Dow narrowed its investigation by filtering keywords to locate potentially offensive materials. which were then further reviewed for violations.

Together, e-mail and the internet can equal lost productivity, which in turn can quickly bring about a reduction in profitability (See chart). The \$9,600 figure from the chart may not seem significant, but when multiplied by 1.000 employees, the result is \$9.6 million lost in productivity. The total excludes all costs associated with providing Internet access.

Another issue employers must face is employer's rights

Declines in Employee Productivity	
ACTORS	RESULT
Number of hours per day each employee spends on personal business	1
Number of work days per year	240
Average hourly rate including overhead expenses	\$40
Annual cost of lost productivity per employee	19 500

vs. the employee's right to privacy, it has become a very fine line for the employer to walk. Due to global resource constraints, employees are spending an increasing number of hours at work, often leaving little time to accomplish duties required in their personal lives. Consequently, employees end up using company time and equipment. primanly e-mail, the internet and a PC; to fulfill these personal duties. Does management consider this to be an acceptable or a fair trade-off between employees working more hours and employees using company assets for personal use? For many companies today, the privacy issue produces a pendulum effect swinging between an accomable level of personal activity in the workplace to one side and a flagrant abuse of company assets to the other side. This workplace dilemma also leads to the question of

whether or not employers have the right to monitor employees' activities utilizing content security initiatives when these employees are using company assets. Do employees have the right to expect a certain level of privacy while on the job? There are valid arguments from both sides of this quandary. Employers believe they not only have the legal right, but the obligation, to monitor all activities within the confines of the physical surroundings as well as with company-owned assets. Today, the clash of both standpoints is being fiercely debated in many executive boardrooms, with employee rights groups and within certain legal circles.

in addition to privacy rights, businesses are confronted with the illicit siphoning of trade secrets. Proprietary information remains a significant security concern for many CEOs in 1998, for example, the Department of Commerce IDOCI reported that U.S. businesses incurred \$12.5 billion in intellectual property losses.

Statiscs indicate company insiders are often responsible for the majority of damage. These insiders can be current or former employees with motives such as revenue, self-promotion, natoriety or financial gain if omployees continue to have unlimited access to information without a comprehensive control security infantive in place, milliones of dollars worth of intellectual capital could be trisking out of the business understorted.

It is critical, therefore for humans decision—makers to consider the drawhacks of mentioning employees," activties when valiating whether on no develop a connect security instative. The process is often time-consuming and labor-intensive. Dedicated human resources are needed to review all o-mails flagged for supprisons activities and the supprison of the process actives in a rad to subsequently determine appropriate actions internet usage records require a suffer review and exilternet usage records require a suffer review and exil-

uation process. This can be a costly endeavor to ensure a secure and productive ebusiness environment. The question becomes, which is the lesser of him oxid? Investing to keep the environment secure? Or investing to replace what is lost or stolen from the environment?

Content Security

In older to entire a source and productive chainters extinctioners, while practicing employee privity, business discussion-makers call implement a comprehensive contest and implement a comprehensive contest security policy whodeled in the cally stages of the business policy formulation. Contest security picks are where entire instructions are approximated to include the contest and demander and minimizing who contest and demanders and minimizing who contest and demanders and minimizing who contest and demanders contest productions of the contest production of the contest production. The total door often contention inclusivally speak on corporate policies. The contest can be both active and possess Drangle of a facility of the contest production of the contest pr

content include viruses. Trojan horses, ActiveX, executables (exe) and malicious mobile code. Passive content includes e-mail and excessive use of bandwidth in addition to archiving, encryption and image scanning, the functions of content security are.

- E-mail scanning and monitoring Checks all e-mail

 inbound and outbound for confidential data, exces-
- inbound and outbound for confidential data, excessive file size and proprietary material Messages are scanned using keywords and phrases
 Web content Checks all Web activity by identifying
- and managing Web content containing racist or hate material, hanned files, pomography, profamity and potentially lost or corrupted material

 Downloadable applications execution = Checks all
- Downloadable applications execution Checks all content for viruses. Java scripts, ActiveX and exe. These can be attached to e-mails or hidden behind downloadable material from the Web.

A comprehensive content security initiative involves participation from the employer and the employees to ensure adoption and success of the program. The main components of a comprehensive program include the following elements

> ■ Establish a content security policy – a company policy that defines electronal usage for employees and warms them about acceptable business practices when company assets and the repressions for violating the policy. This policy covers all email correspondence, internet usage and appropriative see employees capectations of pivacy. Employees are warred that mortification of the process. International content of the process, consent form A successful policy require movings employee early in the process, movings employee early in the process.

molving employees early in the process, gaining their buy-in and being flexible with expectations.

Education and training - By educating

employees and raising awareness of security issues, employees better understand the benefits of a content security program. • Content security solutions - These

 Content security solutions - These solutions enable businesses to identify and manage coment access over the internet.



Ripped Off That of intellectual property most frequently

- occurs through the following groups a Insiders
- Intruders
 Hacktiviers

MERCE

Criminals
 Industrial espionag
 Government sponsored activity

Many vendors offer these solutions, including Content Technologies, Tuttblewerd and Trend Micro.

Maintenance and review - As businesses change, company policies are updated to ensure business and network integrity in the ebusiness environment. Content security solutions are modified to address new threats and hazards.

Implementation of a comprehensive content security program will help ensure a secure chainness in an "always on" global coronion to relate three or se-establish, educate and enforce — approach to content security, businesses gain a high degree of confidence, while fostering a harmonious and rusting work environment.

Risks of Disregarding Content Security A plethora of issues can arise if a security program.is not

implemented. It can expose the company to an overwhelming number of legal and financial problems. Below are a few issues executives need to consider.

- Class and individual action suits
 Loss of network integrity and availability
- Loss of intellectual capital
- Loss of employee productivity
 Defamation of brand name and regulation

Clan and Individual legit action in the form of scale transaction and hostic work enhancement, inclusion of privacy and wrongful termination are caraptive of the privacy and wrongful termination are caraptive of the most common legit failures. An illustrative case was fooders. Nissen Moder Co. 1999.11 host employees seemed to be compared to the compared of privacy because the e-mails were obtained through monoloouse. The segar front in more of the common page and plants he morphores used for manufact through a properties of the compared to properties of the compared to the compared to programing the compared seep front; the employer was more than the comparer when the second control of the comparer bushows are discharge were as more than the comparer when the compared to the comparer when the comparer was more common compared to the comparer was more common com

Another example was New York State Correction Officers, and Police Benevolent Association vs. State of New Vork Department of Corrections (2000). In this case, union members are suing the State of New York for exposing confidential information about the correction officers to immates. The condential information of social immates. security numbers, addresses and other personal information. The union is suing for an unspecified amount in damages. This is a provocative example of potential liability due to unsecured data.

When viruses, encourables or malicious mobile code compromes neclusión integriry and availability, missioncritical data can be lost or stolen without detection. One malicious anack can wreak havec casang millions of dellars in lost reviews, not to mention the potential laiss of intellectual cispatil. Reports estimate 91% of all chaumers rimines go undetected or unreprined. If a criminal breaks into a home, a homeowner would report the intersion to the propor laise relationers authorities. Whit wouldn't take the propor laise relationers authorities with wouldn't take.

same thought process apply to the business? Brancesco often refain from diviging their vulnerabilities in order to prevent immanted noticity and adutional stacks and businesses cart alford to blemish their reputation and businesses cart alford to blemish their reputation and brand name. It takes seven times more effort and money to attract new customers than it does no bold on to cisisting ones, to the ebusiness world, streat and lovally are critical armbeles to previous.

Breaches of security can become the catalyst for severe economic upheaval. Therefore, content security should be integral to the stratege business plan to saleguard against the potential legal and financial liabilities inheren with business activities conducted over e-mail and the internet.

Adding to the argument, the return on resistance (100) archived to practively implementing a content security plan in quantitable from both, an evaname and human resource prospection. Essentially, business reap the municipal proteits of esablishing a comprehensive processor of esablishing a comprehensive program though increased employer productive, improved metwork integrity and availability, stronger relations with register and availability, stronger relations with partners and supplicit, and increased purple proteinal. In addition, humberses cultivate knowledgeable employees the same water and face an paral quantum for negating of the date was not and can paral quantum for negating of the content of the propriety of the content of the propriety of the propri

Finally, senior executives also earn the respect, trust and lispsity of the workforce by establishing an environment of open communications. It such an environment, both employee and employer understand expectations and can work isomand reducing potential liabilities and promoting the goals and objectives of the organization.

CASE STUDY: ZENITH ELECTRONICS CORP.

Content Technologies' MIMEsweeper Keeps E-mail Clean at Zenith

Just think of the people

who got hit hard with

the Melissa virus, or any

of the new ones that

came out. We don't have

to worry because

new viruses even if we

haven't updated the

virus definitions.

-left Ferrera, e-mail administrator

Zenith Electronics Corp.

MMEsweeper catches

The hottest growth area in the field of Internet security is content security, with expected compound annual growth of 71% from 1999 to 2004, according to Framingham, Mass -based research firm International Data Corporation (iDC). Content security revenues were only \$66 million in 1999. In 2004, IDC expects that number to reach almost a billion.

The Critical Need

The reason for this fast growth content security addresses a critical need in virtually every company connected to the internet - a need that only recently was widely recognized. Viruses, pornography, oversized files or banned file types, spam and malicious Java code are innocently downloaded from a Web site - there are lots of dangers lurking out there in cyberspace - dangers that can

bring down networks, sour harassment lawsuits, and degrade productivity of both people and systems

Employees can unknowingly or deliberately send trade secrets to a competitor with the click of a mouse. Content security products protect companies from these dangers by scanning content and stopping suspect e-mail or Web downloads before they do damage.

Of course, some companies have been wise for

years to the content dangers posed by the internet Zenith Electronics Corporation is a case in point. A developer and user of technology since its founding in 1918, the Glenview, ill.-based company had 1999 sales of \$834 million. Over four years ago, Zenith was one of the first companies to install Content

Technologies' MiMEsweeper when it was first introduced

MIMEsweeper scans all eanalysis by the IT staff

mails coming into or out of the organization through a dedicated Microsoft Windows NT box. Once through the gateway, e-mail is sent to the local network in Glenview or over leased lines to other locations. Any e-mail that violates policies set by Zenith is automatically blocked. Depending on the violation, the e-mail may be discarded, bounced back to the sender or held for further

"I can't remember the last time we had a virus in here. MIMEsweeper looks for things like Java script HTML viruses. Visual Basic stuff, .exe files - all the things that can attach to an e-mail. Usually, it can clean the e-mail for me - it will actually go in and blow up the attachment lone enough to clean the virus, wrap the attachment back into the message. and send it on its way," says Jeff Ferrera, Zenith's email administrator.

The Greatest Benefit

MMEM sweeper's greates benefit to peace of mind. Furth think off all the people who go at he hard with the Mellous virus. Tasp forces. Are my off the exetors that have come us. We don't have to wen't seen that the come us. We don't have to wen't we haven't updated the virus defentions, which is probably don't do as other as a should be come and then if it wisk in the effice in the morning and section were virus that's going around? and i'm should seen new virus that's going around? and i'm should going i'm yin held that there is probably acre win i'm in yin held that there is probably acre win i'm in yin held that there is probably acre win i'm in yin held that there is probably acre win.

Virus Updates

Not that updating the virus definitions is all that difficulf. Ferera says. Bather than reviews the wheel. MIMESweeper works with the anti-virus detection product an 1r organization may have already installed, involving that product to detect and cleanse a specific virus when it thinks one is present. Zenith, for example, uses the Command Software (bujuler. Firstds) Virus Scanne for MIMESweeper. To update the virus definitions all fixed to do is download them from the Command Software (bus size. Ferera says.

But Zentih doesn't take any chances when it comes to attachments. "If an e-mail comes in here with an attachments and an e-mail comes in here with an attachment containing, say. a Visual Basis, script that it doesn't recognize, MIMEsweeper has instructions to hold the message until If we looked at it." Ferrera says. "Typically what If do is check out the message to see if it looks okay before releasing it to the intended receiver."

Greater Control over F-mail

Perrera also likes MIMEsweeper because of the control it gives Zenith over its e-mail traffic in general. For example, it can detect who's sending or receiving the most mail — which allows better resource deployment and load balancing. MIMEsweeper also helps Zenith to accurately and quickly diagnose user e-mail problems.

"We also use MIMEsweeper for scanning outgoing mail," states Fettera." I can think of one case in particular where we had an employee leave use in began soliciting his ex-Zenith colleagues to join him at his new place of employment. So we blocked all incoming mail from that sender.

Given the need, the system can also be used to scan all e-mail content for a particular phrase to protect against loss of trade secrets, or to block people from sending or receiving e-mail to or from specific addresses."

More Than a Sense of Security

MIMEsweeper can also help users with issues other than security related topics.

"Actually, someone came to me today — they were sare their e-mail had been lost. I was able to check the log files and see that, yes, the e-mail had come in but it had been mis-addressed." he save.

MiMEsweeper had not only held the mail, it had sent a message to the sender notifying them of the

"I would consider MIMEsweeper to be a 'musthave' for any organization," Ferrera says, "if only to protect yourself. I think the product is invaluable."



VOU DEUT MAN.

And it can blow a nasty hole in the side of your company. The most innocent-looking e-mail can be a silent letter bomb.

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BUSINESS

THE HUMAN FACTOR

Technology isn't the only critical factor in chusiness initiatives in fact, many companies struggle more with employees than with systems when launching online ventures. Getting people in line with a new vision is the higgest challenge — and the most important, experts say, s 42

MAKING The Grade

What makes an internship good or bad? Just ask the student reviewers at InternReview-com. The site, launched by a group of Carnegie Mellon students, lets interns rate their experiences so others can know what to expect before accepting an internship, 42

TAKING CHARGE

Kmart is on its fourth CIO in the past five years, but as the retailer finally commits to a long overdue restructuring of its information technology systems, analysts predict the company's new IT leader will take on more responsibilities and will stick around longer than her predecessors, a 44

LINKING TO THE THIRD WORLD

The nonprofit Global View Network is spearheading an effort to fund and huild an electronic procurement system that developing countries could use to connect to the rest of the world. • 46

ONLINE ELITE

Online exchanges are a logical way of linking huyers and sellers, writes Paul A. Strassmann. But, he warns, success in business-to-husiness e-commerce will be increasingly dischated by a firm's capacity to apply its economic clout to extract the lowest possible hids from potential suppliers, a 48

WISE Investments

A few years ago, mergers made perfect sense for hanks looking to cut costs and add IT services. But how well have the mergers met initial projections? Find out how some of the higgest hank mergers have fared over the years, \$52

HIRING Homework

Before shaking hands, it's important that both employers and new hires know what they're getting into. There are many resources that can help job seekers and hiring managers figure out who they're dealing with > 58

MUSICAL TASTES

Copyrights are nothing new. But the Internet — and file-swapping sites like Napster — have sparked a widespread to information vs. the legal rights of copyright holders. Which side will win the debate is still up in the air. 98



THE NEXT PHASE OF ERP

DO YOU HAVE MIGHTMARES about that long, arduous enterprise resource planning (ERP) project that you endured a few years back? Would you like to upgrade the system? If your answer is yes, you're not a masochist. In fact, analysts say, upgrading an already-installed ERP system can yield big rewards.

E-Businesses Struggle to Rally Troops for Growth

Managers say employees, not technology. pose the most challenges for online ventures

OUNDING LIET a bromon occupational

hazard for executives who head up e-busi-Consider Toby Trevarthen, vice president at AllAdvan

tage.com, an online infomediary company in Hayward, Calif. The company, which launched io April last year, has grown from one to 700 employees in the space of 13 months. And during that time, Trevarthen has had the same refrain; It's

people issues, not technological ones, that present the greatest challenges in executing an e-commerce strategy. "You get to a point where you have too many people doing things all at once, and you

have to regroup," Trevarthen said during a presentation at a recent e-commerce strategy conference sponsored by Cam bridge, Mass-based Gigs In-Early on, for example, the

company's information techoology department "was trying to do everything for every body," he said. In the process, it time line, he recalled.

In the frenzy to get to market first, you don't always follow the plan," Treverthen said.

Taking a Time-out

AllAdvantage's solution was to institute time-out periods. When things seem to be moving too fast, everyone goes to a conference room and hashes out their problems. Sometimes, the atmosphere can get pretty testy, but that's usually what makes the process most bene-ficial, according to Trevarthen. "We have a lot of smart peole with a lot of ideas, but conflict and tension is good. It of-

ten gets us to the best decision tree," he said. At FedEx Corp., David Rousmerce, said his hierest challenge early on was railying 20,000 employees around the Memphis-based firm's transi tion from overnight shipping business to electronic supply chain services provider.

That meant getting workers to understand the company's new mile in contraster recourse such as Garden.com Inc., an Austin, Texas-based electronic retailer of plants and sarden

products. FedEx doesn't just handle home delivery of Garden.com products that consumers neder We needed to have a rallying point to move employees to the Internet



links to more than 80 of the ternet and tracks the ordering and shipping of more than 20,000 items in Garden.com's supply chain.

An Online Business Manifesto Roussain and his e-commerce marketing team came up with what is known as the FedEx E-Business Manifesto, a

document that traces the firm's history, explains who its cur tomers are and defines its future online business path. FedEx wanted to describe to its employees its role as a company that specializes not only in shipping but in designing and executing electronic sup-

"We needed to have a rally-

ing point to move employees to the Internet. We wrote it down and made it relevant by showing bow each project in the company fits in." Roussain said.

Today, the manifesto, which was written in 1998 but is continually updated, is given to all new employees and is used in virtually every aspect of Fed-Ex's business, from creating orw products and services to writing speeches for executive presentations

The manifesto essentially functions as a benchmark, which is a critical element in any online business strategy. according to Giga analyst Larry Paul, a former IT executive at Farmington, Conn.-based Carrier Corp.

*Measurement is absolutely critical in moving forward in e-business." Paul said. *Companies that succeed at transforming to e-businesses are also good at change management," he noted. "There's constant change. E-business planning is not an event. It's a

Student Interns Hand Out Mixed Grades to Employers

Rating site reveals recruiting potential of intern programs

BY JULENNA DASH Most student interns are accustomed to having their per-

formance graded both inside and outside the classroom. But a handful of students at Caroegie Melloo University in Pittsburch have turned the ra-Nes with their month-old Web. site faternReview.com Students from any school

can anonymously post information at the site on a compamy's dress policy, salary and perks and give the experience an overall rating from one to "We received a lot of recog-

nition from upper management," wrote one student, who gave a five-star rating to his inip at Memphis-based FedEx Corp. "I was really surprised by the amount of trust

gave me during the internship." In contrast, a student intern at a Pittsburgh-based manufacturer said the company "didn't really give me too much to do. I spent a lot of time being bored and just charries police.

InternReview.com. which operates under the name ThinkCo Group, was founded by a group of Carnegie Mellon computer science and business students, many of whom had had poor internship experiences, said Ron Urwoogse, the site's president and a Carnegie Mellon junior. But group members had also heard stories from students who had worked in challenging and interesting positions. So they

decided to launch a site that lets studeots know what they're getting into before they sign up for an internship. The site hopes to eventually add a feature that lets managers review students' résumés.

Julie Yancey, director of worldwide people develop-

definitely use the résomé search capability to find candidates, once it's available, FedEx places a lot of weight in its internship program, she said. The company annually employs about 120 interns

> le addition to a monthly salary between \$3,000 and \$4,000, FedEx internship perks

Making the Grade

no separation between we and life. Oftentimes, peop will come in and work on Priday and Saturday night Pree thinking is not encou aged. Opinions are not accepted well."

ment at FedEx, said she would paid travel expenses and assistance with finding social events either at the company or within the local community

> Like at many companies, internships at FedEx often serve as a hiring pipeline, and more than half the company's interns later accept jobs there. To further boost its intern placement rate, this year, FedEx began us ing former student interns as a recruiting resource during campus job fairs, anid Yancey Students "typically listen to their peers [rather] thao [to] a bureaucrat from a corpora

> tion," said Yances Because of the demand for student interns, FedEx offers interns only to those managers who are willing to hire a student after graduation, barring any work ethic or personality

sues, Yancey said. These days, because of the tight skilled-worker pool, the biggest mistake companies can make is in not paying attention back to work for them after graduation, said John Chal-lenger, president and CEO of Chicago-based workforce consultancy Challenger, Gray &

Christmas Inc.



Most servers replace yesterday's servers. This one replaces tomorrow's, teroducing by 9000 apprecione, the first enterprise server to have its power matched by its flexibility. Healthly that's ready for U-A-4, and flexibility that coses from multiple appreciate present like 189-UK, Linex, Windows 2000, and others set to be, locar/appreciates.



Kmart Puts IT Overhaul in New ClO's Hands

VP given more responsibility than her predecessors

Kmart Corp.'s new C10, Randy L. Allen, is the fourth person to bold that title in the past five

But as the company moves forward with a major investment in its information technology systems, Allen will take on an expanded role over her predecessors and will serve as executive vice president of corporate strategic planning, a eswoman at the Troy.

Mich.-based retailer said. Allen will have more mone at her disposal than many of her predecessors. Kmart rely announced plans to spend \$670 million on technology and logistics this year, part of a two-year, \$1.4 billion plan

systems and improve its execution and store performance, the spokeswoman said. "That's money than Kmart

has spent in the last decade on IT." she

added. Jim Dion, president of Dionco Inc., CIO at Kmart, won't be a retail consulting firm in Chicago, said

he has long suspected that I budget constraints were responsible for the decornies of Kmart's previous CIOs. "I just think they get frus-

seems to be bellying up to the but to pay what they need to get current." Joseph Osbourn, Allen's im-

mediate predecessor, joined Kmart last fall as the company



N L ALIEL MA

Mart Stores Inc. and Minneapolis-based Target Corp. Dion noted that Kmart has "a lot of catching up to do.

particularly on the logistics side and the store systems side." Allen joins Kmart from Nam

York-based Delnitte Consulting in New York, where she was trated and leave," Dion said, a partner specializing in retail. adding that Kmart Tinally annuard, manufacturing and distribution industries. She was previously a consultant at IRM and The Boeing Co. in Seattle and chief information and administration officer at Phillins-Van Heusen Corp. in New York.

SNAPSHOT

CIO/CEO Lovefest

CEOs of large companies are generally very pleased with CIOs and IT departments, a major shift from the low rati they gave IT a decade ago, according to a recent survey by

ion Partners Co. in Reston, Va 54% said their CIOs report directly to them

73% said they have a very strong relationship with their CIO 69% described IT as aligned with the business strategy

14% said that companies don't speed enough on IT, compared with 72% who said they spend the right amount

57% said their CIOs have taken leadership positions in e-commerce 16% said their companies aren't extrerable to new or prespected com-

Base SDC(Ox box Forbur 1,000 o

Boston-based AMR Research | his own team. "I'm sure it's re-Inc. analyst Janet Suleski said lated to standard management Allen's appointment is "probaturnover* she said bly not related to any spectacu-"They're in a pretty tight sitlar failures on the previous CIO's part."

uation now where they need to make a lot of changes in their Suleski noted that Kmar IT infrastructure and deliver a CEO Chuck Conaway joined lot of improvements quickly to the company only recently, and keep their stockholders hapmight have wanted to bring in py." Suleski said 8

PIMM FOX/VOICE FROM THE VALLEY

You can be a contender

EPUBLICAN PRESIDENTIAL contender George W. Bush uses it. So did Bill Bradley. Al Gore's campaign started using it right after announcing the selection of Joseph Lieberman as Gore's vice presidential running mate. They're all using the Internet, combined with

powerful, easy to-use software, to go after voters. dollars and volunteers. And it's changing the way campaigns are run. The Internet and computng power have turned the PC from a numbers cruncher

into a communications tool," says fun Ross, director of public affairs and political campaigns at Solem & Asso ciates, a campaign consultancy in San Francisco. This year's presidential election is proving the for

midable capabilities of the Internet to raise cash. Former presidential candidate Sen. John McCain (R-Ariz.). for example, pulled in more than \$1 million within 48 hours via the Internet from contributors who were gal-

ized by his landslide victory in the New Hampshire primary earlier this year. "About 15 years ago, nobody knew how to work with voter files and do the numbers. But now in California there we three or

four people and two or three consultants who can belo campaigns manipulate these databases," says Ross, "If you are going to run for office, you have to work with data vendors. If not,

you will lose." The databases consist of unter records crossed with real estate records as well as

other databases, which could include everything from motor vehicle registrations to phone book entries. And now you can add an Internet component: your e-mail address and location All this emphasis on targeting the right voter stems from what Ross describes as

the fragmented nature of those who some "The campaign is getting more and more scientific as candidates try and find who they need to talk to in order to win," he says.

A Big Boost In addition to more computer firepower to target voters, raising money online received a boost from the Federal Election Commission (FEC). Last year, the FEC accepted the Bradley

c-mail marketing and datacampaign's request to recognize for federal matchine funds contributions to political campaigns made by cendit card

One firm with a history of helping run campaigns is Washington-based Aristotle International The company - whose clients include Bush, 45 senators and more

than 200 members of the U.S. House of Representatives - recently signed a contract with Mountain View, Calif-based VeriSign under which VeriSign and its customers will be able to authenticate the age or identity of their Web

site users against Aristotle's datahase of waters Aristotle, in turn, could use that information to tarnet banner ads to specific users designed, of

course to sway It's the sam tactic that busi nesses have been trying to execute: Target customers using cookies.

While the software used to cross-reference different databases is fairly rudin tary, the use and implica-

tions of the information gathered is sophisticated. Of course, companies such as Aristotle are just responding to market demand, and when one use of a database proves ineffective, another one will pop up to take its place. In business, that's called marketing; in politics, some might think it intrusive.

Tailored to You Imagine receiving from a

candidate personalized messages that are designed for your demographic group and political affiliation. You'd never hear an opposing view You'd be pampered with predigested poli-

tics, a Muzak soundtrack to the movie of your own choosing.

"Some people say that vot-ers are apathetic because of the scientific ways in which we run campaigns," says Ross. "I don't know. I get hired to run and win campaigns. I don't get hired to get more people to vote."

If you're not ot copocity, don't pay for copocity.

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BUSINESS

Nonprofit Hopes Third World Procurement Goes Electronic

BY MARIA TROUBLY

The Global View Network profit organization plans to more easily to the world.

cies and corporations that for Giotal view Network profit organization plans to more easily to the world.

Gives and corporations that Giotal plans to build an alternet to developing nations.

Systems that Third World gov-liance of nongovernmental or-liance gap between rich and

poor countries, said founder Howard Cohen. The problem. he said, is getting someone to build the infrastructure without being paid up front

"It takes a lot of serious alliances to get this to work." said Dr. William Tiga Tita. CEO of the U.N.'s Industry Trade Information Network, which connects the chambers of commerce from the U.N.'s Group of 77 (G77). G77 is a coalition representing 133 developing nations. The network will be a contact between GVN and G77 nations

Cohen said General Electric Co.'s Global Exchange Services unit has agreed in principle to be lead contractor for the system, which is scheduled to launch early next year. But Stanley Hasvic, a marketing ger at Fairfield, Conn. based GE, said his company hasn't decided yet.

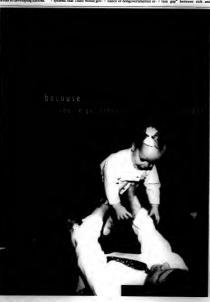
Cohen said GVN plans to collect a commission on each order made through the procurement system. One percent of each sale would go to the government and 1% to the participating supplier.
"The attraction is that there's

no up-front investment for the nment, no World Bank ans," Cohen said. GVN is negotiating with about a dozen countries, he said. None have committed to participating.

The commissions collected will go into an escrow account from which GVN and its partners will be paid. Leftover money would be used to fund health care projects and other public-service initiatives.

World governments current ly spend \$4 trillion a year on public procurement out of a total world product of \$30 trillion, according to a report by the Inter-American Development Bank, a Washingtonbased regional funding agency. A country that spends \$3 hillion per year buying everything from medical supplies to mili-tary equipment could save \$500 million per year, Cohen said.

The project sounds like it would have the beneficial effect of opening up some countries' procurement systems to more sunlight," said Bruce Mc-Connell, president of Washington-based global technology management consultancy Mc-Connell International LLC *But not all countries are going to be ready to open up their procurement system to that





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BUSINESSOPINION







PAUL A. STRASSMANN

The impact of B2B

of the phenomenon of oligopsony - what economists call a condition where many sellers enmilitary weapons manufacturers have only a few customers (governments). So far oligon sony transactions have been rare because of dif-

ficulties in coordinating purchasing decisions among competing sellers But Web-based business-to-business auctions have changed that. They offer ideal conditions

to operate purchasine alliances. If fully developed, they'll likely lead to a global concentration of purchasing power. When that occurs, it will influence how corporate information technology is run because the alliances will realign

the management of global logistics. Already, B2B alliances are forcing corporations to re-examine procurement and sourcing strategies. This kind of turmoil will help bring the CIO into the corporate boardroom to offer advice on bow a firm might counter the potential erosion of profit margins

when B2B arrangements help lower costs. But before you plunge into any 828 venture, consider that success will be increasingly dictated by a firm's capacity to use its economic clout to get the lowest possible bids from suppliers

For example, consider Covisint, the online purchasing con sortium just approved by the Federal Trade Commission, representing Ford, GM, Daimler-Chrysler, Nissan and Renault. These five firms account for 44% of the cost of goods sold (\$379 billion industrywide) and 91% of

net profits (\$20 billion) of the entire global automobile industry. These firms expect to realize material cost reductions from their adoption of Covisint-based procurement methods because Covisint's economic power will give its members pricing leverage over an estimated 50,000 suppliers. (The FTC and German

authorities are still concerned about potential antitrust violations, though.) If you're the CIO of Honda or Mack Trucks. you'll have to decide whether to adopt the data formats, procurement procedures and information-processing methods, plus a large collection of rules for the conduct of business as defined

counter only a few buyers. For instance, U.S. by Covisint, set up your own B2B site or join

THE THE PROLIFERATION of business-to-business Web sites, we're witnessing the emergence

> some other alliance that would compete against Covisint. Another example of leverage is the Exostar

purchasing consortium of Boeing, Lockheed Martin, Raytheon and BAE in the global aircraft manufacturing industry. These four firms account for 71% of the total cost of goods sold (\$96 billion industrywide) and 62% of net profits (\$3.6 billion) in the industry.

It seems that many companies are recognizing that they can increase profits by joining in a cutthroat auction market where suppliers will have to rely on pricing and conformity with standard specifications to win business on terms and conditions that a handful of domi-

nant firms will dictate IT managers should consider these points

L The enormous profit gains that can be achieved through B2B procurement will funnel most new IT investments to B2B ventures while scrapping much of "enterprise" systems that were only recently installed as mostly unsuitable to support B2B interenter-

2. Most of the newly announced B2B firms will disappear. Purchasing consortia, dominated by the economics of only a few giant pur-

chasers, will take over 3. Unless a supplier has a clear-cut economic advantage, preferably technological, smaller companies will have to merge to successfully engage in R2R bidding

4. The economic impact of B2B on global trade will generate negative political and regulatory reaction from governments concerned about their economic sovereignty. Ultimately, politics, not technology, will dictate the scope and power of B2B purchasing consor-

tia. The alarms have been sounded already by the European Community, as well as by a number of Asian nations, concerning the overwhelming U.S. influence in forming B2B ventures.

Strassmann can be reached at paul@strassmann.com









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BUSINESSEXECUTIVE EDUCATION

N A WARM spring day earlier this year, left Albert came from Fort Wayne, Ind., to walk around the Chil War betteffeld at Gettyburg. Pa. Albert says he was thinking about Ool, Joshus Chamberlain's 20th Maine Regiment of Volunteers. On 1014 2. 1863. Hery defended the Union

flank against charge after charge

known as Little Round Top.
"When the soldiers were out of ammunition, they fixed beyonets and ran down the hill. Historians say that unit's courage and commitment to its mission was the turning point of the

mission was the turning point of the war." Albert says. It was a history lesson that Albert says has affected his life today. "I learned that no matter what our title greatly impact the outcome by committing to our objectives and dutifully carrying them out," says Albert, second vice president and director of enter-

prise technology services as Philadelphis-based licono Financial Groups"Standing right on the spot where
Chemberlain fought brought that
lesson to life for me," says Carp Kern
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Leadership Learning

"Lincoln has taken executive education to a higher level than most organizations," says Dick Dooley, founder and president of The Dooley Group Inc., a consulting farm that helped Lincoln develop and implement its program. Dooley is a former CIO and a co-founder of the Chicago-based Soci-

cty of Information Management. The forum isn't simed at pounding technical or management content into executives: brains. Instead, Lincoln's internal program accepts approxi-

internal program accepts approximately 3d committed participants per year. They meet once per month to discuss the books they are required to read, give and observe presentations on besiness issues, work on strangicplanning, hear guest speakers and attend special events like the one at Gettysburg, Pa. 1 have a 20-year career in TI. I've

"I have a 20-year career in IT. I've been to management and leadership classes, and they tend to be technique focused," says Albert. "The forum is different. It challenges who you are as a person, shakes up your paradigms and fundamentally changes how you operate. It's a sustained program of learning, where the results for exceed learning, where the results for exceed

what a single class can do."

Now in its fourth generation, the forum "creates a common language and set of experiences for Lincoln recentives," says Barbara Taylor, second vice president of employee development at parent company Lincoln National Copy is beadquarters in

Philadelphia. Forum participants are also required to complete a "give-back" project that complete has compared. The first "class" compiled abook of feworite statements, books and speakers' quotations. The second class built a Web site second class built a Web site second database to capture the forum's intellectual capital. The third class created a college-recruitment program and launched a mentoring program to

The program has also had a positive impact on the IT organization at Lincoln, according to Albert and Kern.

rove retention.

Lessons From The Forum

Perficipents in Lincoln Financia Group's erecutive aducation forum offer the following actives to IT managers who would like to sponeor their own programs:

Dare to be creative but like corporate culture in mind.
 Agree upon goals for the program.
 Secure top management

a Secure top management buy-in and participation. a Provide cross-functional networking opportunities. a Expect executives to put ne earning into practice.

"As a result of the forum, I developed a propensity to ask questions and seek feedback. We're building that into our IT processes so that we stay focused on the needs of our user community," says Albert. A member of the first forum class.

Albert now volunteers as a program facilitator. His continuing involvemes has belped him build the mentoring skills that be applies to his own staff members.

members.
"The learning trickles into your
own performance and, ideally, improves the performance of the organization," he says.

Kern, a participant in the third class, found the experience immediately applicable to his job. "The forum enhanced my ability to leverage relationships with colleagues from various disciplines throughout the organization and to better understand their views on IT issues." he says.

Commitment to Education

Lincoln's success with the forum is based on a strong commitment to executive education. The company also sends some of its people to university-based executive programs and provides tuition reimbursement for employees.

"It's impo ant to match executive programs and learning to a company's culture," says Taylor, "Executive education should always push an organization, but not at the risk of disconnecting with the company. Lincoln learned this when we created a virtual corpo rate university called the Center for Breakthrough Business. We came up with a marvelous process and structure, but it was too far out of ... our corporate culture. It's good for executive education to be progressive, but it has to be connected to what will work in the organization."

Viciello is a freelance writer in East Brunswick, N.I.



IT managers in the executive leadership program at Lincoln Financial Group find that history has many lessons in leadership that they can apply on the job today. By fill Vitiello





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BUSINESS

COMPUTERWORLD October 2, 2000

Cashin In On

Recent big bank mergers, aimed in part at slashing IT costs, have yielded mixed results. By Gary H. Anthes and Kim S. Nash

WEN MEDICED MANUA SWEET THE banking industry a few years ago. the logic for getting big quick was compelling. The onset of financial ervices deregulation had begun to open traditional banking markets to nonbank competitors such as credit-card and mutual-fund companies. Increased competition forced banks to seek cost-cutting economies of scale, yet huge investments in information technology were seen as

necessary for developing electronic Indeed, the opportunity to cut IT operating costs while freeing up bundreds of millions of investment dollars to create new services was at the beart of many of the rosy prea ger financial goals that CEOs presented

to their shareholders. But just how well have these projections held up? The results have been mixed. In many cases,

the big cost savings promised from closing redundant data centers, combining back-office operations and applications and downsizing [T staffs have been realized. In other situations cost savings have been elusive or, as some bank executives say, were never a goal in the first place. Diogo Teixeira, executive director at research

firm TowerGroup in Needham Moss sous his rule of thumb is that an acquiring bank should be able to trim 30% to 70% off an acquired bank's IT When banks fail to reach those savines, it may

be because "they execute poorly; they spend so much money on the [system] conversions that sayings are washed out," Teixeira says. In some cases, IT cost savings aren't the objective at all; the goal may be to get new and better systems, which may increase IT spending, at least in the short run. Computerworld took an in-depth look at three of the biggest bank mergers to recent years and discountred stome valuable leasures for IT landers

Chase/Chemical: A Grand Slam The huge 1996 merger between Chemical Bank-

ing Corp. and The Chase Manhattan Bank NA was "close to a grand-slam home run," says Bill Bradway, research director at Meridien Research Inc. in Newton, Mass. "When you consider the scale at which the two organizations were at, the complexity of their business models, the technology they had to sort through - and to do it as efficiently as they did — that's a real positive commentary," Bradway estimates the cumulative IT cost say-

ings at Chase have reached nearly \$1 billion Richard F. Mangogna, CIO for wholesale bank ing at what is now The Chase Manhattan Corp. in New York, says IT cost savings from the merger are hard to figure. For example, spending on percomputer capacity to handle double-digit growth in business and for year 2000 remediation during

the merger period clouds the cost picture, he says. Chase closed half of the data centers the two banks ran, which accounted for 85% of the total IT cost savings in the first two years, Mangogna says. More recently, the bank embarked on a second wave of system consolidations.

Since 1998, Chase has been developing a global IT infrastructure, including databases and networks, that has thus far helped eliminate 700 redundant systems - such as general ledger and trading applications - around the world. "For example, instead of having a trading application in every major cen ter around the world, we have a [single] global trading application," Mangogna says

These recent system consolidati atc even more IT cost savines than Chase has realized from the merger to date. Mangogna says. In its wholesale-banking application development budnet alone. Chase expects to slash \$100 million per year - beginning in about two years - by red mance expenses from 60% to 40% of the hadort he says

Although a bank's financial performance is driven by many factors. TT clearly has contributed to the prosperity of Chase since it acquired Chemical

Banking, according to Manpogna. In 1995, the last full year before the merger, Chase and Chemical had combined operating earnings of \$2.9 billion and a combined average return on equity of 15.8%. For last year, Chase reported earn ings of \$5.4 billion and return on equity of 24.2% approximately a 50% increase in both these key performance measures. And while it's difficult to quantify the precise impact that IT has had on the bottom line, the cost cuts and operational im

Bank One/First Chicago: A \$430M Shortfall

In November 1998, one month after its merger with First Chicago NBD Corp., Bank One Corp. said it expected to see \$930 million in savings annually. Its most recent estimate, presented by a new CEO who was appointed last March, was ssoo million.

While some systems have indeed been integr ed, such as the two banks' credit-card and investment banking activities, observers agree that Chicago-based Bank One is behind in meeting its IT cost savings fargets. In July, CEO Jamie Dimon acknowledged to Wall Street analysts that customer service has been poor, io part, because some key systems remain senarate

For example, Bank One began its First Chicago merger with 20 different demand deposit systems that needed to be integrated. But the integration was stopped last year when prior management needed to show a short-term cost savings and postponed the investment needed to carry out the consolidation effort, Dimon says. The bank now plans to meld those systems by

the end of next year. "If we don't put the systems together, we will die a slow death," says Dimon. Ralph Bierdeman, manager of corporate programs at Bank One, says the bank has "generally met" its original integration schedule, but he acknowledges that "there's a whole lot more we wan to do." Bank One has larged behind other banks in consolidating systems for several reasons, says Bierdeman, who oversees bankwide integration Merger, page 54

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Continued from page 53

rojects. Year 2000 remediation, for example, partially dictated which systems got immediate attention.

Moreover, both banks had systems that still hadn't been integrated from previous mergers, he notes. Within the old Banc One, for example, deposit systems in Texas and Louisiana are different from those

in Arizona and Utah. Bierdeman also notes that the size of the two banks was a complicating factor in the merger. "It's hard to say whether it didn't go as well as it should

have. We never did one on that scale before," he says And several areas are integrated, Bierdeman adds. They include the banks' trust, brokerage, investment, credit-card and car-financing operations, as well as

human resources and general ledger activities. Other integration efforts are in the pipeline. In mer lending, all new loans are processed on the old Banc One's system, while existing loans are processed on each bank's existing legacy system.

First Union/CoreStates: A Mixed Bag

First Union Corp. says it has achieved the \$80 million per year in IT cost savings the company projected when it acquired Philadelphia-based CoreStones Financial Corp. in April 1998. Unlike Chase, which says its systems consolidation effort will continue indefinitely, Charlotte, N.C.-based First Union com pleted all of its merger-related IT work within a war of announcing the \$17 billion deal, says Jim Chester, senior vice president of automation and operations.

But despite the apparent success of the First Union/CoreStates union from an IT cost-cutting standpoint, it was a rocky marriage for customers. To meet its ambitious cost-cutting goals, the bank closed more than 100 branches and laid off thou sands of employees. In addition, as part of First Union's Future Bank strategy, bank employees were redeployed from basic, front-line customer service functions to jobs selling highly profitable items such as insurance and investments.

IT was a cornerstone of the Future Ronk program as First Union rolled out "cost-efficient delivery channels such as telephone banking, enhanced ATMs, card products and online banking," as it said in its 1998 annual report. But the new program also meant that CoreStates customers who were accustomed to face-to-face interactions were increasingly sent to information kiosks or call centers Customers deserted in droves. According to pub

lished reports at the time, First Union lost nearly one-fifth of its CoreStates customers. In addition, First Union lost 9% of CoreStates' deposits and 14% of its loan business as a result of the defections, analysts said. First Union officials declined to comment on these issues.

First Union's postmerger cutback in labor-intensive branch services "helped them short term say they reached their cost-cutting goals, but not in the long term because they lost customers," says Ron Mandle, an analyst at Sanford C. Bernstein & Co. in New York. "If you pay a big price [for a bank — First Union paid 22 times its earnings for CoreStates), then you have to be very aggressive in cost cuts, which means you're taking more risk in customer service." CoreStates was much larger than any bank that First Union had ever acquired, and Chester says First Union underestimated the complexity of CoreStates' commercial systems. For example, First Union should have proceeded more slowly in converting the complex, customized processing that CoreStates had set up for its large corporate

accounts, he says In May last year, Edward E. Crutchfield, First Union's chairman and CEO, announced that last year's earnings would be approximately 15% lower than originally forecasted. The reason, in part, was slower-than-expected revenue growth from the region served by CoreStates and from the bank's

Future Bank and Internet initiatives. Crutchfield also said these initiatives were part of a "new business model that no longer includes book acquisitions as a fundamental part of our strategy."

If we don't put 120 different demand deposit] systems together, we will die a slow death.

JAMES DIMON, CEO.



Banking on Experience

search, Tim

nder O'Ned & Part t bank. That's because IT

in the Manufacturers merger, data centers were clos-during the lirst year to gain savings quickly, but the ban came dangerously close to nursing out of maintname capacity. Onese took two and a half years to consolide centers in the Chemical merger to allow for extra lesting, and the capacity turned out to be vital when business gree facility from expected.

In the Chemical Manufacturers manage, a transition

team evaluated each application individually bear led comparison of leatures and functions. But in the Dosay Chemical merger, some 2,500 applications were red into just 67 logically related groups, and choice were made by group. And they were based on just so criteria, not a laundry list of features. In the first merger, a new in

benits' respective IT assets. But in the subseque DEC. Retraggement members were revised at lately and then the team w choose among its IT essets. We learned that trying to lind the 100% solution is a

te of time," says like ngogna. The stress you put on - Gary H. Anth

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on some businesses, the productivity gains that are drawn from their first enterprise resource planning (ERP) systems often whet their appetites for more functionality. Process

improvements, granular information analysis and better positioning for e-commerce with customers and suppliers are just a few of the possible perks of upgrading to a newer release.

Nevertheless, these companies are the exception to the rule, since many hartie-scarred ESP veterans wince at the thought of revisiting those paniful and lengthy initial installations. The vast majority tend to avoid major upgrades and stay on an older release, as long as it can meet their business needs," says Bence Fram, president of Luminate Software Corp., a Rechood City, Calif-Dueed firm that monitors

ERP systems and other applications for Fortune 1,000 companies. Still, there are the hearty few who are willing to upgrade their systems in order to squeeze out even more busi-

ness process improvements.

For example, streamlining human resources operations was the rationale behind GKN Automotive Inc's upgrade to Pleusanton, Calif-hased PeopleSoft Inc.'s PeopleSoft Ro, which began list month. The Auburn Hills, Mich-hased maker of drive shafts for front-wheel-drive vehicles is upgrading from PeopleSoft 75, which it installed last year.

stalled last year. GKN's decision was driven by the company's human resources strategy to the owner of the owner of the owner of the owner owner

department," Bishop says.

Meanwhile, managers who are burdened with paperwork, approvals and benefits questions will be able to use the self-service system to initiate pay increases, find out when new salaries.

will lock in and answer other questions.

We weren't looking for cost savings but to transform the work HR was doing from reactionary — dealing with paper and manual tasks — to proactive, being on the cutting edge, making

people better employees," Bishop says. PeopleSoft 8.0, he adds, turns human resources into a 24-hour service, elimin nating data-entry functions. It also has about 10 times the employee self-service functions as PeopleSoft 7.5.

Play It Again, SAP

The Allstate Corp, has a more efficient financials area and is better positioned technologically to provide customer service, thanks to a minor upgrade from SAP 4,3 last year. Mary Fontaine, director of enterprise

reporting and analysis at the Northbrook, Ill-based insurer, says the upgrade to SAP 4.5 has added functionality in the financials area and for expense processing. "It's now more efficient, and we're able to run functions in parallel," such as allocations, she says.

Prior to the upgrade, says Fontaine, allocations were processed in sequence, which required each job to be completed before the next one could be started. With the SAP upgrade, all those jobs can now be processed at the same time, 40% faster than before. What once took six days can now be finished in three and a half days, says Mike Wahls, an Allstate project director.

Squeezil More Ou Of ERP system

For the brave few, upgrades of ERP systems can yield big rewards. By Sharon McDonnell

BUSINESS

Amherst Corporate Computer Sales & Solutions, an online seller of IT products and services to companies such as San Francisco-based Generotech Inc. and Santa Clara, Calif-based National Semiconductor Corp., found measurable productivity gains, thanks to two successive upgrades of Denverbased J. D. Edwards & Co.'s One World

software last year. We've seen a 20% productivity increase in terms of sales per employee since we deployed OneWorld, and with every upgrade since," says Paul Ramirez, vice president of marketing at the Merrimack, N.H. firm, whose sales last year topped \$300 million Sales per employee at Amherst first dipped from \$229,000 in the third arter of last year to \$213,000 in the following quarter, due to organizational restructuring and Y2k-related issues. Sales per employee theo rose to \$224,000 in the first quarter of this

year and \$252,000 in the second quarter. "There's no doubt sales increased in early 2000 due partly to pent-up demand from Y2k, but the real issue is how efficiently we are managing those transactions," Ramirez says. "We're moving transactions better

and moving our information with greater precision," says Kevin Hall. Amherst's chief technology officer. Since we have no inventory, knowing very precisely exactly where your or-

der is is crucial." Now that 60% of the company's sales are Web-assisted, customer and product information has to be "deadon," says Hall, "There's no tolerance for error. We've built personalization features into the tools so customers view only products which are relevant, based on their order history."

Testing is crucial when imp ing any ERP upgrade, and Amheest uses "a pretty rigorous approach," Hall says. Once its information technology team sees that the system is running properly on the test platform, Amherst extends it to the departments with people from a cross-section of the company.

-

grade can make a whopping difference That's what happened when Cybex International Inc., a manufacturer of high-end fitness equipment for gyms and personal use, upgraded from PeopleSoft 7.5 to 7.52 in October last year. The upgrade was painful, but it was

night and day - 7.52 added so much functionality," says Brian Lyman, manager of e-commerce at the Medway.

Mass-based firm For example, PeopleSoft 7.52 helps Cybex manage its customer database better. "It allows us to build customer roles and associations - for example, if a health club leases our equip we don't have to go back and forth between one and the other," says Lyman. Since the company's online store was launched last December, Cybex customers have been able to place orders into its backbone system, track orders and see what Cybex sees. "Some of our equipment is made-to-order; the prod uct configuration module lets cur tomers pick colors for the frame and upholstery without the re-entering other modules require," thus shortening the product ordering cycle, says Lyman

Nevertheless, Cybex had to sweat through some bugs in PeopleSoft 7.52 and needed the vendor's belp to get the system running properly, says

No Pain, No Bain

For Schurman Fice Papers, a designer and distributor of greeting cards, stationery and gift wrap to retail chains like The May Department Stores Co. and Target Corp., the imperus to upgrade its older J. D. Ed-wards WorldSoftware legacy system is coming from its electronic data interchange (EDI) provider.

Schurman's upgrade lass December didn't generate enough information to its EDI provider, Harbinger Corp. (now Percerine e-Business Connectivity Group, after being acquired by San Diego-based Peregrine Systems Inc. in June), to map and formst the EDI transmissions properly when product shipping for this Christmas eason began in July. So the firm was forced to do considerable customiza-tion, "The software didn't go down to the right hierarchical level required by our trading partners - they had no idea what was in each box," says Bob Jellison, vice president of IT at Schurman in Fairfield, Calif.

This meant identifying fields in exsting table structures, with actual box numbers and universal product codes for each item; scanning each hox; and providing additional coding to sort it properly, be says. Schurman will proably upgrade to version A8.1. which Peregrine says is more compatible.

etime next spring. Jellison adds. We realize J. D. Edwards is not in the EDI business and [Peregrine] is not in the ERP business, but we need them to work together without gettine in each other's backwards," he says &

McDonnell is a freelance writer in New York. Contact her at sharonfmc@

Ten Critical Success **Factors** For ERP Upgrades

- 1. Spell out the strategic, large and find ways to measure success in achieving them Assign acco and authority for those goals
- 2. Make sure all top manag ent is united behind the busi goals driving your upgrade
- 3. Because the biggest chal lange is change management, ret staff not only with new lechnical skells but also with skells that often result from upgrades and new job
- Make good decisions faster that balance schedule and cost vs benefits and risk. This is especially inportant because such projects cross
- for your project team to reward their hard work and increased using
- 6. Be rigorous about project r agement and the implications of your partnerships with consultants
- Look at the big picture, establishing a global architecture before do ploying locally. Too many projects begin with a small pilot or in phases and then need to be redone when taken to
- B. Do process re-engineering before and during the project. It's a mistake to think you can do this later or locus on installing the software tiral which often includes many decisions
- 9. Pay attention to dem ing and support needs. Don't try to save money by cutting training costs.
- 10. Fecus and alien your organize tion, team and scope. Your organize tion needs to understand why the proect is worth the pain of change. Your project team needs full-time membe minus the distractions of their real jobs. Your scope needs to be tightly focused to resist the temptation of widening the scope and reworking the



BUSINESSCAREERS

When it comes to job seekers and hiring managers learning about each other, traditional methods are still preferred by most. But just what each one wants to know about the other depends on the job and the level of responsibility. By Stove Alexands

IT JOB CANDIDATES: 'HEARD IT THROUGH THE GRAPEVINE'

DESPITE THE WEALTH of company information on the Wich and in newspapers and trade publications, many information technology professionals seem to still glean their best information about prospective employers from traditional sources such

as the industry grapevine, recruiters and job interviews. James Forbes found that recruiters were his best source of corporate information.

Forber, an experienced enterprise resource plansing (ERP) implementer, recordy started a new job as a serior beatiness systems analyse at the fluid-handling systems forition of TIT Industries loc. an autonoscive industry supplier in Juhum Hills, Molt. Professe, who says he leave he water to be part of an EPP implementation in manufacturing, learned EPP implementation in manufacturing, learned experiences with a Prof. Molt. Professional Services in Proj. Molt. Professional Services in Proj. Molt. Professional Services in Proj. Molt. Prof. Pr

newspapers.

But it was the job interview that sold Forbes on
IT. Unlike at other companies, which gave him rou
tine interviews, he says, the hiring manager at ITT
seemed genuinely interested in someone with his
qualifications a 50-year-old open open names with a

wealth of ERP implementation experience.

Taknew from the interview that they previously had tried a manufacturing engineer in the position, who didn't work out. But I didn't care, because my new supervisor was very excited about me as a manufacturing consultant," Forber recalls.

John Carroll, a Web developer with a master's degree in computer science and eight years of experience, last summer chose a new dot-com job based oo what he could glean from the Web and his friends, plus some shrewd observations of his own about the Web sites of prospective employers.

Carroll's situation points up an interesting problem for today's IT job seekers, who are often faced with multiple offers but are then left to their own de-

vices to make the right choice.

I really was agonizing over this, because I had some great offers," says Carroll, who finally accepted a position at Computer/obs.com Inc., an IT job-positing site in Aliana. I would get up early in the morning and look at these Web sites to see what I liked the best. I began to ootice that the other site I was continued.

sidering — an Atlanta-based Web portal — was down every morning a 5 am to make changes in the size. And I know that they were so small a company and so bleeding edge that I would be the one there as 5 am. every morning. I decided that I did not want to be the one responding to a pager at 4 am, because I did that easilier in my career.

Carroll also came to another conclusion, this one born of his own experience: The Web site that was

I really was agonizing over this, because I had some great offers.

> JOHN CARROLL (ABOVE), WES DEVELOPER, COMPUTERJOSS, COM INC.

Getting To Kno

BUSINESSCAREERS

down every morning also seemed to have the more nebulous business model of the two. Although both doct-com were so tiny that they had generated little news coverage, he managed to find one story that and Computerfolsoom bad generated some profits. Meanwhile, the privately owned portal company's finances were a mysery. Carroll decided that a sometimes-profitable company with an apparently hetter business model was a safer career choice.

pusiness model was a saler career choice.

Another consideration was human resources. The company Carroll chose had a full-time human recommendation of the company Carroll chose had a full-time human resources. The consideration of the consideration is the sale as the consideration of the consideration of the consideration of the company with the full-time buman resources director would likely be more heighful, he says.

tor would likely be more helyful, he says.

Sometimes, produciousal cuttests and an inquinitive
nature provide a window through which to view a
prospective employer. Daryl Browdy, who recently
joined the IT department of the Chicago Board of
TTAde as manager of order routing, learned the ins and
outs of the Board of TTAde to operations while working
board's activities, he became a part while internation to the
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eventually would go to work there in an IT job. Browdy, who manages systems that handle trading floor financial transactions, found out about his current position by reading a job description on the board's Web site. He then checked out the IT depart ment's management style by asking questions of recruiters and acquaintances at the Board of Trade.

Browdy also recommends that job seekers check into a company' financial stability, venture capital investments in start-ups and the carnings of publicly beld companies are readily available in new reports. "You should research a company in the same way you would decide whether to make an investment in it." he says. It also doesn't burt to ask why the last person left the sich he says.

IT MANAGERS: TECHNOLOGY WILL GET YOU HALFWAY UP THE LADDER

If managers seem to value company knowledge leas than technical experties, it least among randand-file IT workers. But IT managers have different expectations of what a job candidate will know, depending on the rank of the job heing filled. At the lowest marks, technical expertise is valued far more than knowledge about the company. But that begins to shift at the level of project manbut that begins to shift at the level of project manpany knowledge count more because the IT person is likely to have more contact with other parts of

the company

"If it's a leadership position, I clearly expect that the person applying will have enough of an incident to understand our business," says Mike Natan, CIO ar Reliance National Insurance Co. in New York Reliance Insurance Co. in Philadelphia. "I would expect that person to have some understanding of the competitive forces in the insurance business and who the big players are. Even first-level managers I.

who the big players are. Even first-level managers I would expect to have an interest in and some appreciation for the business.

Not so for those doing the coding. "For IT technicians. I'm not as concerned shour that I'm among a life of the coding."

Not so for those doing the coding, "For IT technicians, I'm not as concerned about that. If someone is a C programmer, we're more innerested in his or her technical competence, work ethic and whether the person is a cultural fit with our particular environment." Natan saws.

Joh candidates can do some useful research for interview by reading company and industry Weh sites as well as news accounts. Nation says. But he says he helieves company mission statements reveal little about what a firm is really like. Reading biographical materishs on top enecutives you're likely to he laterviewed by is worthwhile if you can find to.

way to relate to them on a personal level, he says.
Given the tight job market, some companies are willing to talk to job candidates at the programmer level who haven't done much homework on them.
The idea seems to be that a candidate who has no opinions about a company may he easier to convince

of its viernes.
"It doesn't bother me if they don't know about the company" says Lustie Rusch, CIO at Terra Industries Inc., a Sioux Ciry, Joss, manipeturer of agricultural chemicals and engine foed additives. "I use that as an opportunity to talk about the company and sell them on it during the interview."

While Terra Industries prefers applicants for jobs at the project leader level or higher to have knowledge of the company, even that requirement has been relaxed due to the shortage of job candidates. "It's more of a luxury than a necessity," Rusch says, But some companies expect even new college

our some companies expect even new conege graduates to be company-fitters. "We expect college candidates to know something about the company and what we do," asys Tony DelDuca, vice president of IT at Nableco Inc. in East Hannews, "I'm "In the middle once of IT, we look at whether people can do the job or not, and it's probably not so much based on whether they know a lot about what

much based on whether they insow a for about what the company does. Safe, finance and anathering computer systems are prety much the same everywhering computer systems are prety much the same everywhering bellow anyt. But at the middle management roled—which includes samegament affection—candidates need a broad base of business experience in the commer packaged goods area, he asys. They need to do a lot of research about our company vs. other consumer packaged goods companies.

MATCH MAKERS

Resources that can help job candida research o potential employer

There's a long list of places that job candidates can look for information about prospective employers, although not all of the data you continue will be worthwhile.

Company Web sites are No.1, since they can give you a feel for the company and, in morey cases, maght into who the company's customers are. Knowing who the customers are may be indicative of the hand of work you will go.

Miseion statements are also often lound on Web sites, but their value is questionable. Major statements have a carbina mount of "Jallo lastor," says Marco Nicolayede, chief technoloi officer at Moselett com, an on-time discount at topply store in Allaria. They may not defen the company 100%, but they can take you 30% of the west there.

Prise releases and news articles bod compose on who have by using Wid search regions, Both could be viewed with some wind could be viewed with some wind could be viewed with some wind could be the best of the country of the country

technology companies.

■ Executive biographies posted on Web sizes may also be helpful. The health is that these people may be several leyers above the person you? be working for, so the efformation may not be referred. But if you're lucky enough to

be interviewed by one of these people, the information could help. For example, if you share an area of expertise with the information find a way to bring that up during the conversation, supp think factor. CO at Relations Hazarras Co. in New York and Relation I featurance Co. in New York and Relation I incurrance Co. in New York and Relation I feature.

■ Interviews can also be a source of information, in a nod to the tight bloor meries, if managers seem to be whing to be intermigated by pic cardiades about their compresses and arm't abouted to be asked such probing autitions as. Why did the last person lesser this poly? "This not offeredad," says Tuny DeDuca, ever preschool of If all Nabisco. "Earlied the same lends of questions when less statements." — Selvey Alternation.



BUSINESS

USINESS CONCEPTS IN BRIEF

Copyright

A copyright provides a person or organization with the sole legal right to reproduce, publish or sell an original work, including literary, dramatic, musical, artistic and certain other intellectual creations. There has been a flurry of recent controversy about the unauthorized use of copyrighted materials on the Web.

Napster seriously

compromises

the recording

industry's

business plan.

KEN DORT, COPYRIGHT

has rights to it," she says. Thu-

there can prevent reproduc-

tion and distribution, and the

public has the right to use it

fairly." Fair use and public-

domain use let the public make

a certain number of copies for

her example, if someone

copies a few paragraphs of a

news article to anclude in a re-

purt, then it's probably fair use.

article isn't used and the copy-

personal tree Grow adds.

DOW A GLICKSON LLC

this Mote . Litt days when you would record a some off the radio instead of buying

New there's Napster, which lets you download somes off the Internet and play them on your computer.

But the Washington-based Recording Industry Association of America (RIAA) decided that Napster crossed the line, and a federal judge agreed The music-sharing site was ordered to stop making copy righted materials available othout authorization.

Sites like Redwood City. Calif-based Napster Inc. have sparked a wave of debate about unline freedoms vs. the rights of copyright holders to protect themselves and their works. And while the recording, publishing and muric industries have always pold close attorntion to copyright infringement they say the Internet has caused them to fear massive revenue loss more than ever before (Napster and the RIAA refused

because it isn't used for comto comment for this story; mercial purposes, the whole Copyright infringement oc curs when a person "claims" ing doesn't affect the newsposomeone else's work as his per's market, Gross and own by distributing it and using it without permission from

the copyright holder. But it's not that simple, says Robin Gross, staff attorney at the San Francisco-based Electranic Preedom Frantier "The author has rights to their work, just as the public A Bioger Venue

But Ken Dort, a copyright lawyer and partner at Chicagobased Gordon & Glickson II C. says the illegal distribution of material has become more com-

The record companies can either adapt to this or die. My bet is they'll die.

ERIC S. RATMOND, CO-FOUNDER AND TECHNICAL DIRECTOR. CHESTER COUNTY WITER HE

tore, people had to rely on playwill distribution, now, they can turn on their computers and find some backer movies Napacr seriously compromises the recording industry's business plan." Dort says

But it would be caster for the music and movie industries to use technology to protect copyrighted materials, rather than try to solve the problem legally, he adds, for example, DVDs and MPAs (the next seen protion of Allthat has a book in leatures that present users from copying them

The problem is that hackers have firmed out how to beed security codes on DVDs, with belp from a Modific Island NY-based Web site named Just: The Hacker Quarterly, In August, however, a federal rador ordered 2400 to stop postang or linking to the softDVD player software and allows copying of movies.

fim Burger, a lawyer at Dosc. Lohnes & Albertson PLLC in Washington, says he agrees that the problem has to do with the motion picture and music industries' difficulty in adjust-

ing to technological change Why is this going on? It's not like all of a sudden 20 million people want to steal," he "The ald media are having a hard time struggling with

a new distribution system." Surper says he doesn't think sites like Napster or 2600 would be nearly as successful if consumers thought they were taking money from artists rather than the all-powerful record

and movie companies. After the appeals have been settled in the Napster case, the site will probably have to shut

down. Burger predicts. The consumer is losing out. because this is a new and exciting way to get music and to get cheaper and better music, and the music industry fier? I will ing to participate in this. Burger says.

Survival of the Fittest

bric S. Raymond, co-founder and technical director Chester County Interlink a nonprodit organization chartered to provide free Internet acress to residents of Charact County, Pa., says he thinks artists have the right to control the distribution of their work.

There's exploitation and greed on both sides of this dispute - both the record companics and the Napster crowd are ripping off the artist. I'm on the side of the artist," he says Raymond says he doesn't thank the povernment should

prohibit technological growth because the music industry can't keep up with quickly changing technology.

The market squeeze out inefficiencies and in an internetworked world, physical distribution of music is a big, silly inefficiency." Raymond says. "The

adapt to this (digital distribution of musicl or die. My bet is they'll die.

Chad Boyda, who runs a site called Napigator.com, which helps users find music-sharing servers like Napster, says many people use Napster for legitimate purposes, like sharing noncopyrighted files. The site shouldn't be held responsible for people who use it for illegal

purposes, he says. "The average user does not want to go out and steal, but if you're not making the technology available, people will per the music elsewhere," he says. There are companies that

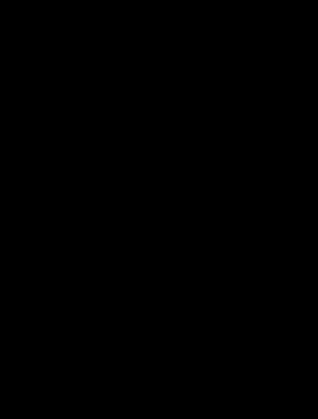
legally distribute free copyrighted music. EverAd Inc. in w York provides its users with free music that's licensed from music labels, explains Doug Millis, the company's vice president of marketing. To pay for the license and

keep the digital music free EverAd embeds advertising in EverAd plans to distribute electronic books sometime around December and cur-

reatly distributes free music, games and software, its technology prevents users from being able to burn CDs or copy Music to MD2 Millis con-

Holohan is a former Computer-

world intern.



Copyright

DEFINITION

A copyright provides a person or organization with the sole legal right to reproduce, publish or sell an original work, including literary, dramatic, musical. artistic and certain other intellectual creations. There has been a flurry of recent controversy about the unauthorized use of copyrighted materials on the Web.

IMPMBER THE days when you would record a song off the radio cad of buvine

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without authorization. Sites like Redwood City. Calif-based Napster Inc. have sparked a wave of debute about online freedoms vs. the rights of copyright holders to protect ives and their works. And while the recording, publishing and movie industries have always paid close atten-tion to copyright infringement. they say the Internet has caused them to fear massive revenue loss more than ever before. (Napster and the RIAA refimed

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the copyright bolder. But it's not that simple, says Robin Gross, staff attorney at the San Francisco-based Elec-

The author has rights to their work, just as the public and reach of the Internet. Be-

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compromises the recording industry's business plan.

has rights to it," she says. "Authors can prevent reproduction and distribution, and the public has the right to use it fairly." Fair use and publicdomain use let the public make a certain number of copies for personal use, Gross adds. For example, if someone copies a few paragraphs of a news article to include in a report, then it's probably fair use, because it isn't used for commercial purposes, the whole article isn't used and the copying doesn't affect the newspa-

A Bigger Venge But Ken Dort, a copyright

lawyer and portner at Chicanobased Gordon & Glickson LLC. says the illegal distribution of material has become more complicated because of the speed

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AND TECHNICAL DIRECTOR, CHESTER COUNTY INTERLIN

fore, people had to rely on playsical distribution; now, they can turn on their computers and find songs, books or movies. "Napster seriously compromises the recording industry's business plan," Dort cave But it would be easier for the

use technology to protect copyrighted materials, rather than try to solve the problem legally, he adds. For example, DVDs and MP4s (the next generation of MP3s) have built-in features that prevent users

from copying them. The problem is that backers have figured out how to break security codes on DVDs, with help from a Middle Island. N.Y.-based Web site named 2000: The Hacker Quarterly. In August, however, a federal judger ordered 2600 to stop posting or linking to the softDVD player software and allows copying of movies.

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ners thought they were taking money from artists rather than the all-powerful record and movie companies. After the appeals have been

settled in the Napster case, the site will probably have to shut down, Burger predicts. "The consumer is losing our

because this is a new and excitthe way to per music and to get cheaper and better music, and the music industry [isn't] willing to participate in this" Burget says

Survival of the Fittest Eric S. Raymond, co-founder and technical director

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think the government should prohibit technological growth, because the music industry can't keep up with quickly changing technology. "The market tends and in an internetworked

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keep the digital music free, EverAd embeds advertising in EverAd plans to distribute electronic books sometime around December and cur-

rently distributes free m games and software. Its tech nology prevents users from being able to burn CDs or copy music to MP3 Millis says 8

Holohan is a former Computerworld intern.



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WHAT HAPPENS WHAT HAPPENS PLAN B FAILS?

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SUNGARD SECURE

IOE-AUER/DRIVING THE DEAL

A strategy for the right service levels

ERVICE LEVELS ARE an important part of any resultsoriented contract where specific vendor performance is required — and where it must be measured. Service levels are especially important in outsourcing and

telecommunications deals in which the customer becomes vulnerable because he depends on the supplier. A results-oriented contract with meaningful service levels and remedies is an effective mechanism to bely customers actually get what they're paying for and milamite exploitation by oppormite exploitation by oppor-

must exploitation by opportunistic vendor crisistic service levels and remedies for vendor nonperformance can be very difficult. With some pressure from a prospective customer, vendors are generally willing to contract for service levels and, sometimes, remedies to go along with them. But vendors usually try to make service levgle as broad and as loose as possible, which makes them tougher to measure. Meanwhile, customers wate service levels to be as tight as possible to ensure maximum and measurable performance. The challenge manifests itself during contract negotiations.

As a customer, remember that the vendor is always trying to minimize its risk by placing as much of the burden of proof on your

shoulders as possible. Here's a recent example. During negotiations for a global relecton deal, a customer was faced with the service-level challenge. Several prospective vendors proposed their standard service levels. The customer believed those levels were too broad for some critical

components of its network

The vendors stuck to their

standard rhetoric, stating that their service levels were reasonable and consistent with industry practice.

with industry practice.

The customer didn't fold
and argued that while the
levels may be consistent
with industry practice, they
wereo't sufficient for the
company and some parts of

its octwork.

The customer's procurement team focused the prospective vendoor's discussions and proposed solutions on the actual network. The team presented its network map and pointed out there were certain locations that were critical to operations. The vendor-proposed service levels wereo't adequate for these critical locations because they left the customer vulnerable to too much the control of the customer vulnerable to too much the control of the customer vulnerable to too much the control of the customer vulnerable to too much the control of the customer vulnerable to the control of the customer vulnerable to the c

network failure. (But the proposed service levels were acceptable for some other noncritical locations.) The customer then

The customer then stressed the need for location-specific service levels to guarantee the robustness and serviceability of its oer-

work as well as the continuity of operations.
This argument secend to be new to the vendors and was met with some initial skepticism.
The customer

of its sleeve by saying. "This is a way to distinguish yourself from your competitors. It's an opportunity to excel and gain an edge. It's an op-

excel and gain an edge. It's an opportunity to win a global deal without assuming an inordinate amount of

risk. We're willing to accept your standard offering for most locations if you give us a display of confidence in your ability to perform for the critical ones. These locations are critical for us, and we need to more fairly allocate the risk of network failure."

So far, two suppliers have agreed and are proposing

technology development at Microsoft, which has a history of vigorously fighting the Royal copying of software and other materials.

Retail Not Quite Ready for Holidays

After text year's turbulent colors inident shopping mason, relation are harbeing deem to the below to be weather the stern they expect this year, exceeding to a sarrey conducor by enables at Clevelant based LakeWest through colors and textform and the state of the total readers are mergin color and traditional units channels, but of the 164 readers are mergin color and traditions are sense. their hest location-based service levels. That's just what the customer needs to be competitive and maintain

some negotiating power. Isn't that what it's all about? Suppliers with real confidence that they can do the job shouldn't be afraid of performance guarantees.

What's more, having supplier competition on service levels helps both the evaluation and negotiations

the customer.
The difficult task ahead is actually agreeing on the specific metrics that ensure that all three critical service-level components — time, money and

quality — exist and are meaningful. In other words, every performance factor must be measurable, including how long it will take, what the maximum cost is and how

acceptable (to the customer quality will be verified. The presence of competition and the global size of the deal were effective forces in getting the customer this far and so far so

good. Watch for an update. It order at a physical sters and fewer than 4% allow customers to verify in-sters inventories colleg.

Report Forecasts E-Commerce Growth

A - OUTSIDE OF CONTROL A - OUTSIDE OF CONTROL OF CONTRO

BRIEFS Survey: Net Embraced

By Younger Users
The Pow Internet & American Life
Project, a Washington-based remarch organization that mentions
the Impact of the Internet on socioly, but wook released survey results allowing that half of the adults
to the U.S. dark how Internet.

access, and that 57% of these nonsears have an interest in ge cellins. Another 25% of the one wars said they probably won't connected to the interest. On to other hand, the organization on a "substantial majority" of und espect to do so in the feture. That supports that internet penetration will eventually reach levels similar to those of biophones and tolersions, although it could take "an estimated period of time, perhaps ... a presention" to much that point, according to Per.

Pratt & Whitney Launches Exchange

arrounced that \$24 billion aircraft
region manufacturer Prat & Munray in East Hartford, Conc., has 3cinesed SpaceWorks' Order Manuge
or and other software to Irade size
transically with its corporate outsmers. Prat! & Whitney customers
will have access via the internet by

downtime in the event of a the engine manufacture's catalog of products and survices. Centemers will also be able to place and track orders and schedule thisments over the internet.

Industry Faces E-Book Piracy Threat

by in all wally under the threat of plays as continuous share silections to both files, as contribute to all flory and Corps, assentive speaking at the Dectrustic Book 2000 conference in Washington last week. Dectrustic Books account for about only 7% of the 220 Million U.S., publishing martin, but that marather could gree if large-scale Nagathaffile exchanges develop for books as well as music, develop for books as well as music, develop for books as well as music.

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TECHNOLOGY

MICROSOFT'S SPECIALTY TOOL

The market for Microsoft's Handheld PC might not be broad, but the fact that it has a real keyboard and more memory with Windows functionality is helping the product attract specific users such as visiting nurses and grocery store clerks. > 66

Two rival camps of database and data-warehousing software vendors say they plan to join forces to work on a unified set of specifications for metadata users to rely on as they navigate data warehouses. > 68

TALKING PDAs

A cell phone add-on just released for Handspring's personal digital assistants tests the boundary between voice and data communications. But analysts wonder if the VisorPhone will have appeal beyond technophiles, a 66

HANDS ON

Sun's StarOffice is a worthy alternative to Microsoft's Office 2000 productivity suite, says Computerworld reviewer Howard Millman, and you can also get it for Unix and Linux. • 72

FUTURE WATCH

Holography's most intriguing applications are decades into the future researchers say the field is where TV was in the way out of the labs and into our lives. > 74

B2B: IT'S NOT ABOUT TRUST

Securing networks in a husiness-to-business partnership has nothing to do with trust. Companies need good policies. procedures and working relationships to prevent backs and weather the occasional breach. > 78

THE HOLF TRUTH

Computer researcher Dave Dittrich told attendees at the annual Usenix Security Conference that IT managers are still ignoring the root cause of distributed denial-of-service attacks: operating systems and software designed for ease of use instead of security. » 78

OUICKSTUDY Randwidth refers to the

transmission capacity of an electronic communications line, such as a dial-up phone that con nects an individual PC to the Net through a service provider. It's a measure of communications capacity - and more is usually better. . 80

tributor epicRealm uses prioritization and intelligent-caching techniques over its global network to speed e-commerce sites. The start-up says it can deliver dynamic data faster than its competitors, which focus on streaming media. > 82



TAKING CARE OF KNOWLEDGE

MORE AND MORE COMPANIES are making it a priority to refine the flow of skills and experience among employees to save the resources workers waste when they have to learn for themselves what their colleagues already know. To accomplish that, companies are creating the role of chief knowledge officer, who's charged with protecting and fostering intellectual capital.

Legato Rolls Out letWorker Update

nd restoration to local or reogins at \$1,550.

lotorola to Launch

Buetnoth Phone a, the Timeport 270, last we weight and lower price tag of Windows CE devices

Storage Tek Adds Tage Library to L Series

L20 tape library, the latest addition to its L Series tape libraries. The L20 holds up to 2.2 tarabytes of data and on up to ZZ unanyes or data and so digital these tape (DLT). Sur-OLT and LTO Ultrium technology von. It supports Windows HT, Not-re, Linux and Unix. It will be sold usugh channel partners. Pricing in and on the configuration.

equity Offers New **Jetwork Services**

ntee of in-

Microsoft's Handheld PC Fills Niche Role

New H/PC 2000 version isn't expected

THE MARKET for Microsoft Corp's Handbeld PC (H/PC) might not he broad, but the fact that it has a real keyboard and more memory with Windows functionality is beloine

the product attract specific types of users such as visiting nurses and grocery store clerks. Such users have said that they would rather rely upon the keyboard of these clamshell and light laptop-type devices supported by the Windows CE operating system than on a lesspowerful handheld computer with touch screen or small keys. And, compared with larger laptops, users say, they prefer the instant-on feature, light

"With Windows CF, the keyboard is large enough to use, and therefore, there is much more typing that clinicians are able to do. They wouldn't be happy with a little keyboard with chicklet-sized keys" like some handhelds provide, said Debbie Yunk, a clinical systems coordinator and registered nurse at Swedish American Home Health Care in Rockford III

Yunk said she welcomed Microsoft's Sept. 7 announce ment of the Handheld PC 2000, which will run on the same Windows CE 3.0 operating system as the smaller Pocket PC devices the manufacturer introduced this past spring.

There will be two form factors for the new devices, offered by several vendors: clamshells with screens half the size of a desktop PC's, and tablet versions with nearly fullsize screens. Both will have nearly full-size keyboards and Windows functionality and will support wireless functions. ces will start at about \$1,000: the new Hewlett-Packard Co. fornada 720 is priced at \$999.

About 55 nurses and theranists at Swedish American have been using Windows CE 2.0 running on Tokyo-based NFC Corn's MobilePro 780 clamshells for approximately 18 months.

Battery Life and Death

The NEC equipment prohably won't be replaced right away with H/PC 2000s, but Yunk said she's glad that wireless functionality will be added along with the use of a cell phone and that buttery life will be extended. Currently, she said, clinicians may have to pluz in the MobilePro at a patient's home to make it through an eight- to 10-hour day something that could be avoided with battery life of as much as 15 hours, as promised with the latest version.

Clinicians presently download and upload a day's worth of patient charts via a dial-up connection, which could be sped up "if we decided a wireless network was comething

Full-size laptops would be for less attractive than the NEC to have mass appeal, say analysts devices because they would be double the 2-lb, weight of the Mobile Pro and possibly dou-ble the price of the \$900 unit. Also, laptops need a long bootup time, while NEC machines

are instant-on, Yunk said. Swedish American's patient care software was created and is updated periodically by Pa-tient Care Technologies Inc. in Atlanta, a mobile computing integrator for 400 home bealth Patient Care has used Win-

dows CE on larger devices th those from Santa Clara, Califbased Palm Inc. "because serious data collection on patients is needed, and Palm devices don't have the processor size memory or screen size for industrial management applica-tions," said Mark Braunstein. president of Patient Care. Also, new federal requ

ments for patient privacy make it "particularly important" that Microsoft has installed a special chip. CryptoAPI, inside H/PC-2000 machines to allow users to install their choice of encryption technology, he said. At Town & Country Markets

Inc. in Seattle, a pilot program involving some type of H/PC 2000 machine will begin later this month at the Shoreline Central Market, said Tim Clif ford, director of information

The specific hardware hasn't been chosen, but it will feature a plug-in to allow voice over IP communications in the grocery store, he said. For example, a food buyer "could quickly talk to a department head about setting up a special dis-play," Clifford said.

Town & Country is only able to use its handhelds from Cincinnati-based Telson Corp. with an ordering system con nected to one wholesaler, Associated Grocers Inc. But the new Windows CE machine will have the processing ability to combine Seattle-based Associated Grocers' orders with orders for specialized food wholesalers, Clifford said.

"We will avoid the entire seep of converting paper to computers for some wholesalers," he said. And because the Windows CE platform is based on open standards, Town & Country expects to integrate some of its specialized

applications, Clifford said Analysts said that the H/PC 2000 clearly seems headed for specialized markets, not for consumers or general office workers, among whom it has failed to catch on.



DIGEX

For E-BUSINESS





TECHNOLOGY

Opposing Groups Merge to Develop Metadata Standard

ended a five-year rivalry, de- ; plug-and-play environm Two opposing camps of data-base and data warehousing software vendors last week standard simed at creating at standard simed at creating at land a long soft and a standard simed at creating as land a soint announcement, the

Meta Data Coalition (MDC) in Austin. Texas, and the Object Management Group Inc. (OMG) in Needham. Mass., said the two organizations would merge to work on a combined set of specifications for metadata interoperability among different data warehousing tools.

Until now, the two industry groups have supported com netine standards for metadata. which functions as a card catalog for warehoused data. The merger signals an end to a political tug-of-war between the Microsoft Corp.-affiliated MDC and the OMG metadata effort, which has been backed by wendors such as Oracle Corp. and IBM.

The two groups plan to merge the features of the OMG's recently ratified Common Warehouse Metamodel standard with the MDC's Open Information Model stan emerging with a single standard within six to 12 months.

The resulting specifications should allow companies that run data warehouses to exchange metadata among products developed by different software vendors, improving interoperability

Surprising Step Forward

Michael Schiff, director of data warehousing strategies at research firm Current Analysis Inc., said the announcement is a significant step forward for added that he was surprised by the timing. "I expected this to occur, just not in my lifetime," he said.

Microsoft's Thomas Berg straesser, a product unit man ager for SQL Server, said the issue of MDC vs. OMG isn't really a question of Microsoft ws. Oracle. "If you look at the two specifications, they are very similar," he said.

"If you get one standard that the industry supports, it stands a better chance of being imple-

mented," said Schiff. Archie Dayton, a technical project specialist at Coca-Cola Enterprises Inc., a bottling mount in Atlanta, said his company uses products from Oracle, NCR Corp. and Microsoft, and having two different standards makes it harder to

There should be strong support for this. Metadata is an important starting point for in tegrating husiness data," said Dayton, adding that it is a key aspect to all e-business trans ons, "You start with met data, and you go from there."



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TECHNOLOGY

Handspring Launches Combined PDA, Cell Phone

Analysts wonder if device will have appeal beyond technophiles

F THE PERSON seated next to you on the has tomorrow morning starts carrying on a conversation with his personal digital assistant (PDA), don't panic — he might be talking on a cell phone. Last week, Handspring Inc. in Mouotain View,

Calif., released VisorPhooe, a cellular phone that plugs into its Visor PDAs. Visors are Palm-compatible PDAs that offer two features that Santa Clara. Calif.-based Palm Ioc.'s handhelds don't: a huilt-in microphone and a Springboard port in the back into which users can plug modules to enhance the device's functionality. The VisorPhone (\$299 including activation fee) along with cellular service plans is available only through Handspring's Web site (www.handspring.com).

This ign't the first attempt to merge cellular phones with

VisorPhone or use its combination headset and microphone. While talking on the VisorPhone, users can also continue to use its other functions, for instance, to create new appointments or

Though there have been a variety of devices for Palms and Visces that enhance functionality, such as digital cameras, backup modules and modeach new version of the PDAs has maintained the basic functionality of an

To me, this kind of combination adding a voice module that allows me to make voice calls with software that allows me to do a lot of interesting things - looks like a logical extension to the relative PDA simplicity, said Mark McGuire, an analyst at Stamford. Conn.-based Gartner Group Inc.

Bin Screen Real Estate Besides having the basic features of

many of today's cell phones - variable rings, silent vibrating ring, a record of all calls made the VisorPhone's biggest fits may be its software

and its 160 by 160 pixels of en real estate, a whonping amount for any cell phone. The software takes full advantage of the larger screen size, allowing users to

conquer tasks that are phones, such as setting up a conference call or short-messaging ser-vice message (SMS). SMS allows text messages of up to 160 characters in length to be sent to either an e-mail address or an SMSenabled cell phone. Using the Visor to tap out SMS messages

is considerably easier than a cell phone keypad. Although the VisorPhone currently

works only when plugged into a Visor, Handspring said it's developing a separate container for the phone to work outside of a Visor Initial adopters might include sales representatives, repairmen or overnight-delivery workers, according to

schez With custom applications, a device such as the VisorPhone could replace "the custom-built brick that the FedEx guy carries around," he said. But beyond the gee-whiz factor sure to attract an initial coterie of PDA geeks and new-technology freaks, analysts

said the VisorPhone might remain a niche product for the short term. "It uses the GSM band and it's cool. but (that's) going to keep it an early

rsl want," said McGuire The Global System for Mobile Comsications (GSM), while common in

Europe and Asia, is much less common than Code Division Multiple Access in the U.S.

"A lot of this is a test, finding out where the two kinds of key applications - voice and data - will overlap," said McGuire.

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handheld organizer. But its \$799 price tag and bulky size may have deterred all but the hardiest early adopters. eannable Size

'(The pdQ) tries to graft a PDA into the form factor of a phone, which makes it inconvenient to use for either purpose," said Chris Fletcher, so analyst at Bostoo-based Aberdeen Group Inc.

in San Diego released the pdQ. a cell phone fused with a Palm III

By cootrast, the VisorPhone is 2.4 by 2 by 0.6 in. and weighs 2.9 oz. with a standard battery. That gives the VisorPhone an overall size that, while higger than most cell phones, is still adopters kind of product, which is I

Cross-Examination Sinks E-Mail Add-On

Jude asks the right questions and uncovers security flaws that give a vendor a failing grade

AM OFTIN BERATID by various people — usually my wife, my mother — and now, by some of Computerworld's readers. For the latter group, the issue is my lack of technical expertise. I continue to maintain that I don't need that much technical knowledge. Usually a little bit

willingness to ask stupid questions serves just as well in my job. To give you an idea of my

level of technical knowledge. I can't program at all, in any language. I know what TCP/IP does but am a bit hazy on the differences among bridges, hubs and routers. I can sever remember whether Unix

member whether Units uses "7 or "." So when I'm asked to check the security of a new product to give personal digital assistants (PDA) and Wireless Application Protocol (WAP) Photocs To the Control of the Control of

cess to our Microsoft Exchange mail servers, you'd be excused for thinking that I'm the wrong man for the job. I know next to nothing about WAP, and I even have problems figuring out most of the functions on my

own PDA.

Despite my ignorance, I can identify three major security flaws in the product in about 10 minutes flat. When I question the vendor about these issues, it seems to take it a week to find anyone who can understand my questions. let

alone give relevant answers.

I haven't yet worked out whether that
means that I'm more technical than I
think I am or that there's a startling lack
of knowledge in the industry about anything that has to do with security.

Asking the Right Question

The vendor — I've decided to keep it annoymous, since my point san't to single out one company for criticism — strikes me as being in a rush to take advantage of the latest fad. When I question some of lit design decisions, the most common reason given is

"because it was easier that way."

For users at my company to get access to their Exchange e-mail from their
PDAs, they first have to log io to our

network. We've got that secured quite well. Then they have to log in to the wendor's server product – call it Server X. This server retrieves their mailbones from Microsoft Exchange.

personns a simple to or conversion and displays it back to their PDAs in a format the device can understand.

My first question was about how you log in to Server X Of course Server

X uses its own user identification and password — yet another one for users to remember. To check if you're the right user, it compares the password you supply when you log in with the password you originally set for your account. If they're the same,

you're in. This is all relatively standard.

Of course, to be able to compare the two passwords against each other, the system has to be able to store the origi-

Storing a list of passwords is a dangrouss thing. Any attacker who can get at the list can then impersonate any otheruser. So it encrypts the passwords using an algorithm known as a one-way function, then hides the password file. Almost every password-based system uses a close variation on this method

However, the actual method the vendor uses to encrypt and hide the passwords is a new variant to me. It uses to crypt(3) algorithm, which has been in use since 1975 and should long since have been put out to pasture.

A stranger decision is the place the wendor chose to hide the encrypted passwords. It may sound odd, but you do need to hide passwords even after they have been encrypted.

Even one-way encrypted passwords can be attacked, so hiding them makes an attacker's life that much more difficult. The Server X vendor chose to

store its encrypted passwords in what the vendor's representatives describe as a "hidden" custom attribute in Mi-

crosoft Exchange.

Microsoft has allowed for 15 custom arributes, but the designers of the dialog box provided enough space to display only 10 attributes.

One might assume that the other five are hidden. However, you can choose which 10 attributes to display. And Microsoft even provides functionality in Exchange to display any 10 of the 15 actributes by default. So they're not exactive hidden.

Stranger yet is the means by which a mailbox is retrieved from Euchange. Rather than use the individual's Exchange accounts to retrieve his mail, the system uses a single, generic Exchange account referred to as a "couri-

The veodor even recommends that, for simplicity's sake, this courier account be given unlimited access to all Furbance meilboxes.

Security Implications The implications of using one ac-

count are wide-reaching. Not only does it give attackers yet another powerful target account that could be used to compromise the entire e-mail system, but it also defeats Exchange's granular access control and makes a mockery of its logging capabilities.

its logging capabilities.

I can allow certain people access to
my folders in Exchange so that they can
read some, but not all, of my mail; these

privileges are stored with their user IDs. If they're accessing Exchange via this generic courier account, this whole privilege-granting process is completely bypassed.

As for logging, any significant action

that I perform on an Exchange server is logged. The logs store details of the action along with the date, time and my user ID. If I do something faoilish, we can use the logs to trace the action back to me. But if I'm accessing Exchange through Server X, then its courier account will show up as being responsible for the action, not me.

These weaknesses actually go well beyond just compromising the security of Server X because they actually damage the security of the Exchange server as well

We can only hope that the vendor enough to make will fix some of these weaknesses in cal knowledge.

THISWEEK'SGLOSSARY

WAP: Wireless Application Protocol is a set of specifications, developed by Wireless Application Protocol Forum

List in Mountain View, Calif., that lets developers using Wireless Markap Lan guage build networked applications de signed for handheld wireless devices. WAP 11 is a de facto standard, with sepont from more than 200 vendors, but security managers have concerns because a wereless from resistant or waternable to an entack of the WAP.

erypt(3): This Unix function for password encryption is based on the Data Encryption Standard algorithm, Considered older technology, it uses a 56-bit key, which generally isn't considered

LINKS:

Here are two links to cryptography sources that Jude is researching to ongoing smart-card project:

http://attilla.stevens-tech.edu -kheckenb/crypt3.html: This o good paper detailing cryptography

> new.detaguard.no/bugtrag/ 995,2/0142.html: Ollers a clear escription by Steve Bellows of the stonale behind contemporary

the next release of the product.

Whenever someone takes me to task for not being technical enough, I smile. At the moment, I know much more than I need to in order to defeat these

The point Tm trying to make it that security is more about an attitude than any particular skill set. I overheard an ord of our engineers asking about 1 one piece of software the other day. She started off by asking some quite basic questions, completely unsfraid of displaying her ignorance about the pulying her ignorance about the product. But whe lept asking questions until the understood what the software did and how it did it, and the kept trying to work out the consequences of works.

Although she does have detailed technical knowledge in her particular specialty, that confident ability to ask stupid questions and think through the answers will always be much more useful to me than her specialist knowledge. I look forward to the day when vendors develop systems that are good enough to make me need more techni-

potential system failures.

The journal is written by a relationarily manager, whose name and employer have been disquisced for obsess, reasons. It is posted weekly all writer computerworks com to help you and our security manager - let's cell him. Ade Physicis com or click on Computerworks com it Security Wald-becommunity forum to perforgate in discussion topics.

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A Star Shines In the Office

Can a Unix-based business suite find happiness in a Windows world? Most things you get for free are worth exactly what you pay for them, but StarOffice 5.2 from Sun is reliable, powerful and free - a rare combination. By Howard Millman

array of turbely onegrated applications delivers even im portant productivity feature you would expect to find in an enterprise class of fice suite that competes with Microsoft Corp.'s Office 2000 and Ottawa-based Corel Corp.'s WordPerfect Office 2000. The new package from Sun Microsystems Inc. also has been feet tures you seldom see freedom from heersing fees and true Windows Units crowplatform comparibility. You can tailor the sune's

look and feel while its running under Linux (15.2 or the Unix X Window System to closely

who use different operating stems when traveling StartMice 5.7's collaborative computing femans - called Shedule, Discussion and Mail

- include support for Sinta Clara, Calif-based Palm Inc.'s Palm OS They should be useful in promoting communication amone colleagues who work across the half, across town or across the globe I liked the way Schedule handled task management and event planning. Its convenent c-mail reminders

simplify scheduling. Despite its extensive array of features, the sante's customizable, well-desirted menus, dialog bases and tool ties hele samplify anyunion for example, a pop-out, multiview navigator offers one-click access to four varieties of exploring tools, letting you organize files and folders by project, task or hierarchs. Two features I miss and the main reason I still prefer WordPerfect - are reveal codes and in-content fore presides. But even without general codes, it

was easier to correct formatting problems in Start Mice than in Microsoft Word

gration, however, can be a disadvantage. It takes noticeably longer to start up, about 10 seconds, because it loads almost a dozen applications. By contrast, Word and WordPerfect load their primary modules

(such as Word and Excel) separately as called for Once StarOffice is loaded, however, switching between its modules takes only a second or two. Leveraging the suite's cross platform interoperability. Star-Office's import and export filters let vou exchange files smoothly with other office

suites. I transferred files from StarOffice to both Word 2000 and WordPerfect 8, but not WordPerfect 9 or WordPerfect 2000 - that filter is due early nest sear Occasionally, some minor tweaking was needed, for example to fix sub-8-point fonts in tables. Revision tracking

which can often moddle file ex changes between Word and WordPerfect, worked well. StarOffice uses a platformindependent file format, so documents created on the Linux edition are transferred accurately and intact to the Solaris or Windows versions. Early next year. Sun plans to release StarPortal, a browserbased tool that will integrate with StarOffice to provide net-

Platform-independent Star-Portal will let users view documents on Wireless Application Protocol-enabled cell phones. personal digital assistants and Distriction managers.

Package Peek

All tasks begin in Start Office's Desktop, a control center that replaces Windows' deslaup by default Vins can nasome that has you might like the new look I found StarOffice's Desktop as good a launchpad as Windows, and even better, it less you onganize files and folders and open

or create documents, projects StarOffice Writer, the word processor, creates documents

from simple memos to complex, multimedia-enabled brochures. An array of specialized tools, such as AutoPilot (an interactive document handling macro that's Sun's version of a wizard) and Auto-Function treal-time spelling. error-correcting and autocompletion agents), help you by jogging your creativity and

StarOffice

anticipating your needs StarOffice Calc, the spread sheet program, will be familiar fur users of Quattro Pro. Microsoft Excel or Lotus 1-2-3 to pet up to speed quickly. Among Calc's functions are data analysis capabilities, multidimensional data views and ensuring

what if scenarios. StarOffice Impress creates portable exe-catchine interative two-limentional and LD presentations. It includes vector graphics and special-effects tools for organizing, illus-

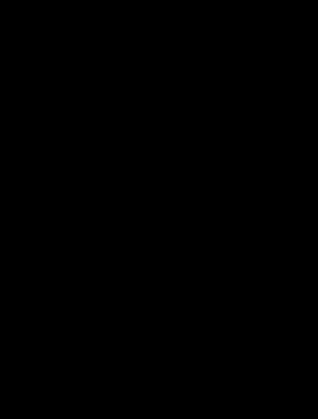
trating and delivering your message This package is an unbentable value: free, ur \$40 un CD with a users guide and without a 70MB download. Sun's recent decision to release the source code will let value-added no sellers and developers add cus-

tom features. As with any one-size-fits all software package, however, StarOffice's sweeping array of powerful applications may be overkill. While I recommend it for use in multinational enterprises, especially those with multiple cumputing platforms. its loading delay may annoy some users. Sun says it may unbundle the suite's primary applications. That would further enhance StarOffice's appeal.

Millman is a consultant and freelance scriter in Croton, N.Y.



STAROFFICE'S "START" BAR (bottom), menus and tool bars igurable and closely resemble Windows in apavior, helping to maintain the suite's look and ole operating platforms. The four-tab. pop-out erates switching between modules



A Star Shines In the Office

Can a Unix-based business suite find happiness in a Windows world? Most things you get for free are worth exactly what you pay for them, but StarOffice 5.2 from Sun is reliable, powerful and free – a rare combination. By Howard Millman

TAROFFICE'S AROAD array of tightly integrated applications delivers every important productivity feature you would expect to find in an enterprise-class office suite that competes with Microsoft Corp.'s Office 2000 and Ottawa-based Corel Corp.'s WordPerfect Office 2000. The new package from Sun Microsystems Inc. also has two features you seldom see freedom from licensing fees and true Windows/Unix cross-

and true windows/Unix crossplatform compatibility. You can tailor the suite's look and feel while its running under Linux, OS/2 or the Unix X Window System to closely match the look and feel of This continuity will help users who use different operating systems when traveling. StarOffice 5.2's collaborative computing features — called

computing features — called Schedule, Discussion and Mail — include support for Santa Clara, Calif-based Palm Inc.; Palm OS. They should be useful in promoting communication among colleagues who work across the pilote. I liked the way Schedule handled tash management and event planning. Its convenient e-mail reminders simplify scheduling.

Despite its extensive array of features, the suite's customizable, well-designed menus, dialog boxes and tool tips belp simplify navigation. For example, a pop-out, multiview navigator offers one-click access to four varieties of exploring tools, letting you organize files and folders by project, task or hiproperly Turn features I mice and the main reason I still prefer WordPerfect - are reveal codes and in-consent font preview. But even without reveal codes, it was easier to correct formatting

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Platform-independent Star-Portal will let users view documents on Wireless Application Protocol-enabled cell phones, personal digital assistants and two-way pagers.

Package Peek

All tasks begin in StarOffice's Desktop, a control center that replaces Windows' desktop by default. You can reverse that, but you might like the new look. I found StarOffice's Desktop as you da Isanchiped as Windows, and even better, it lets you organite files and folders and open or create documents, projects and e-mail.

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Virtually

Holography's most intriguing applications are decades in the future, but some are on the way out of the labs and into our lives. By Barbara Forster

office or at home and ddenly seeing the wall in front of you disappear. hind it is another office with people at a table and you're at the table. Or the scene that materializes is another living room on a different continent, and you're there visiting with friends and family

The technology behind these intriguing, if somewhat eeric, scenes is holographic videorencing, for which a working prototype already exists at MIT. In-office/in-bome use is at least 10 years down the road, however, according to Stephen Benton, head of

MIT's Spatial Imaging Group at the Media Laboratory. "In the last few years, our re-

GINE sitting in your | search has brought us to the point where television was in 1926," Benton says, "Our main inh is to show that we can do it Ten years ago, people thought

But the researchers can now show some convincing, if not quite tangible, proof that they aren't crazy. And you won't have to wait a couple of decades before the first manifestations of the technology move out of the laboratories

and into the real world. Thanks to fiber-oetic technology, for example, holographic data storage is becoming a practical reality.

We can store 100,000 differ ent photos or digital pages that's a terabate lof information] - in something the size allows viewers to manipulate

of a sugar cube," says Benton. Fiber optics can easily handle the wide bandwidth that holograms require because the signals are much wider than those used for television. And even better, the newer technology transmits information more rapidly.

Various industrial applications are being used to take advantage of holographic technology for quality control in manufacturing and testing for fractures, such as holographic nondestructive testing. The flexibility of the technology makes other industrial design applications inevitable. Holograms or "beads-up"

displays are used in military and civilian sincess thategrams give pilots critical information as they look through their cockpit windows. The technology has found a home in the less-technological world, too. In an effort to convey images and messages not possible with traditional media. artists "explore" 3-D space and

pure light via holography. But medical professionals are the most likely early users of improved bolograms. Today's X-raying methods of Magnetic Resonance Imaging and CAT-scan cameras gather 3-D data, but holography offers a way to examine those images in a full 3-D format. Parallax. available only with holograms. the image and see different perspectives as if the object were actually there. The bonus is that because the complex images will be more vivid, they will be more accurately interpretable by physicisms. Improving the technology

that produces holograms is only half of the equation. You need to be able to view them. so work on display media and devices such as holovideo is keeping pace with evolving holographic technology. Benton already has two working prototypes of a real-time imaging system that can render and display computer-generated bolograms at video rates. In designing the electronic video display, researchers have established the principles of information reduction and image scanning. Scaling up to practi cal display sizes still poses significant electronic and electrooptical challenges. So far, the parallelization of the computation, storage and display is fea-sible for 3-by-5-in, images. Several groups around the

LCD screen technology. One group in England is working to eten the transmission time needed for holographic images. Another group is working on images you can feel," according to Benton, "You use a pointer-like tool on the image and it 'feels' like you're pushing it. Eventually, the images should be able to talk, too. The next major breakthrough in optical devices is imminent, says Benton. *Between 1926 and 1936, television went from mechanical techpology to electronic and that's next for bolography," he says.

Researchers are betting that the electronic key to practical holographic devices rests with Micro Electro Mechanical Systems (MEMS), the integration of mechanical elements, sensors, actuators and electronics on a common silicon substrate The realization of complete systems-on-a-chip is the result of the combination of siliconbased microelectronics and micromachining technology.

With MEMS, the cost of producing optical devices will drop. "The first prototype was a big chunk of a million dollars," says Benton. "The first [more reasonable] ones will be about \$100,000 and work their way down" in price. But don't expect to see Star Wars-like holograms, the ones

that seem to float in space, soon. world are focused on using Those have a serious problem with physics," says Benton. On the other hand, don't be surprised if five years from now holographic technology is no longer just a curiosity and has made real inroads into practical life.

> Forster is a freelance writer in Boston



system that can render and display computer-generated holograms at near-video rates. The Mark-II display de-gram (at right) provides 150-by 15-by 150mm mages with a 360-degree way zone at rates of approximately 2.5 hame/sec. Two 18-channel accustry-optic modulators (AOM) (1) are used, with each channel of a single AOM interplace. We dis conserved accounter open forecasts a way of the data, were can unknown as a stage ware declaring been of refel light in parallel. These beams are their deceded to a (2) stated accounter that produces as age with whoto resolution in the vertical direction and this graphic resolution in the horizontal direction. The em-aptions through a 30 been sighter, and each of the loop portions a direction to (4) these of sax hield horizontal anners, and then on to the (5) output liens and to the (6) restant defluring scores for vewing.









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When it comes to securing your business-tobusiness site, don't skimp on security just because vou trust someone. By Mathew Schwartz

your business partners are? Perhaps one is logging in to your secure business-to-business Web site and ordering \$2 million worth of widgets Then again, someone at that same partner company could be exploit ing a hole in your Java server that you haven't had time to fix, gaining root ac-

cess and running direct SQL queries on your pricing database. lt's 9:30 a.m., and someone from that trusted, valuable partner firm just discovered that you sell to its direct competitor for 20% less per item. And unless you do some quick price matching, it's going to find a new supplier. Call it the New Economy paradox:

you partner with a company, allow your computers to communicate via ocure connections and open exclusive marketplaces to trade new or excess entory, all to save time and money. But at the same time, in a different market, that partner is also a competitor. The result is that you've opened your systems to an organization that's

trusted security partners - in fact. there's no such thing. "There's no one outside your on zation that you should be trusting.

says John Lucich, international presi-

trying to put you out of business. Of course, overly curious business partners aren't the only threat when translating business-to-business partnerships into real-world network and computer connections - there are always hackers and competitors. So when creating partnerships, security experts recommend taking a line from the poet Robert Frost - "Good fraces make good neighbors." Partners should

agree on thorough security policies and watch everything.

Trust No Partner Business-to-business security models are only as secure as the weakest link. An attacker doesn't have to break into your network. He can break into a partner's and then use the secure connection to launch a devastating attack on your site. So experts caution that trusted business partners shouldn't be

dent of the High-Tech Crime Network a West Caldwell, N.J.-based computerized network of law enforcement agencies from 15 countries. Treat namers as if they were hostile, he says - because they might unintentionally let hackers attack you

"It's not that you can't trust him or her individually," says Lucich, "You can't trust what they're doing about their net-

work security or who works for them. Given the special ports to which business partners sometimes have access, it's even more important to isolate your network from theirs and finetune the firewall to let only what is essential through, says Lucich.

But good security starts inside your own company. Tools enforce com ance to a security policy," says I maich Accordingly, companies need good and thorough security policies. Lucich recounts asking to see the security poli cy for a company with \$400 mil annual revenue. "It was a fivepage document," he says. "It should be 30 to 100 pages, depending upon what they do." A good policy alerts the information technology depart

ment to what it can and can't do from a security standpoint. "It also alerts wour employees to what is allowed and what isn't allowed." Lucich says. For prospective business partners

examining each side's written security policies is often the first step. "(Both companies) need to have consistent levels of access control and security so that there can be an exchange of information under a single seam of security," says Drew Williams, security segment manager at BindView Corp. in Houston, which makes IT risk-manageAgreeing on a security model is dif-ficult, there is no widely accepted standard. "One of the big items that people are looking at is (British Standard 7799], a framework for security," says George Kurtz, CEO of Foundstone Inc., a security training and consulting company in Irvine, Calif.

But until a standard is available companies are on their own. Thus when forming partnerships, Kurtz recommends first analyzing the prospec tive partner's security framework and then sending in a team to make sure its security is comparable to your compa-ny's. If the security is inadequate, "put the brakes on it," says Kurtz, and don't plan on partnering anytime soon Companies may soon find their lare

or partners setting standards for them.

"Visa [recently] issued 10 commandments for its business partners," says Robert Clyde, vice president of security management at Axent Technologies Inc. in Rockville, Md., which makes security software. "It's a classic B2B partnership: Together, we're going to create this community of trust about using Visa online; we're going to have rules everyone has to follow to

ensure security online." The E-Mail Threat

E-mail is often overlooked as a security risk. "I know a leading security company that gets eavesdropped on by another leading security company because their e-mail is [not encrypted]," says Williams. Unencrypted e-mail is plain text, so messages that are intercepted are easy to read. Accordingly, many companies are using public-key infrastructure (PKI) technology to encrypt e-mail while relegat-

Visa Issues R2R Guidelines

Want to work with Visa International Inc.? The crity guidelines that all Internet-enabled Visa part more large companies could be setting such stand ed Visa partn

- Keep security patches up to dat Encrypt stored date

- Restrict access to cardholder data inside the reign a unique identity to each own

- Peopularly test security systems and pro-
- There are three additional general requir
- Maintain a policy that addresses inform Restrict physical access to cardholder

E Destroy data when it's no longer n

ing all business-to-business tran tions and communications to virtual private networks (VPN). They also use digital certificates to

inticate every order so they can't later be repudiated. Breaking into a VPN is extremely difficult, unless you're a home user with VPN access and are connected to the Internet. That's why experts recommend personal firewalls for laptops and home computers, so backers can't use them to leapfrog onto a secure VPN.

Secure Sockets Layer (SSL) is a es the difficulty level for nications, notes harkers Clyde. "You can do enabling without PKI. You can use SSL - which is just the bad guys — they have to steal something PKI under the covers - and passwords as means of authentication over an en-crypted session. It's probably the most as well as guessing

"Many hackers out there aren't going to be interested in doing physical crimes as well as backer crimes." From a security standpoint, don't forget the lawvers - because hosiness to-business exchanges are a world of legal pain just waiting to happen. If a

hacker uses your site to leapfrog through secure connections into a partner's site, that partner could may you for negligence

"I think this will be the biggest area for lawsuits going forward - hooking up with trusted partners," says Lucich. Contingency plans and pondisclosure agreements can also present a lor of aggravation. If a hacker breaks into your partner's site and starts an attack that you discover, what do you do? You contact the partner, of course, but you also need to be kept in the loop as it closes the security hole. Otherwise, your options are limited. "If you decide

to take down some of the links (between B2B networks], just taking dow a link because you can't get a hold of one might stop the intrusion, but it might have business implications. 00 - what if that link generates millions of dollars per day?" asks Kurtz. Besides potential lost revenue, there are legal risks as well, he says.

But that begs another question: How do you know when a partner company has been broken into? This is especially important, because when business partners tie networks together, they often use ports that no security manager in his right mind would ever use with out the defensive equivalent of Fort Knox in front of it first. (See "Planned Vendor Link Leaves Security Hole." Security Manager's Journal, Sept. 11.)

Some ports even make the top 10 security threat list from the SANS Institute in Bethesda, Md. Under "ports to disable," the SANS Institute recommends disabling the two ports

most often used for business-to-busi ness transactions -- 80 and 443, wh allow outside HTTP and SSL TCP access to a Web server. If a good backer gets TCP access, you can kiss your site goodbye for a while.

Accordingly, you need to know if and when there's a security breach. Though most partners won't let you install monitoring equipment on their premises or network, you can still use intrusion-detection systems to me every packet that comes at your net-work," says Kurtz, "If it looks like anomalous traffic is taking place, [you] need to step in quickly." Kurtz says a common attack begins with hackers trying many ports on a machine to fig

one that's open But sometimes, defenses will per breached. That's why you need to have "a good enough business relationship where you're able to identify the pro lem and work together," says Kur

According to security expert Bruce Schneier in his recent book, Secrets and Lies: Digital Security in a Networked World (John Wiley, 2000), Internet security isn't about whether your sys-tems are vulnerable; it's about how to mitigate the damage when they do get broken into. It might sound bleak, but he writes that it's just too difficult to

Create a 100% secure system today. That's why good policies and proc dures, good working relationships wis business partners and well-configure tools can mean the difference be surviving an attack or seeing your business-to-business partnership

on form of security for busi

to-business commerce today," he says. SSL does have a downside. "Many

[companies] are concerned because

SSL only relies upon passwords," says Clyde. Instead of this one-password

approach, Clyde recommends requir

ing a physical object to get a one-way

object can be a smart card

or a laptop with a digital

"It's much harder for

something," says Clyde.

token stored on it. Using

a physical object incre

sword for each user session. That

Attacks at

A DDOS security researcher says IT departments need to plug basic security holes and set policies. By Ann Harrison

of-service (DDOS) # tacks continue to generage, most information technology administrators are continuing to inore the root causes of and possible preventive measures for such attacks

ues a leading security expert. Dave Dittrich, an IT researcher at the University of Washington in Seat-tle, made the critical discovery that the DDOS attacks are the work of organized groups that use known security holes to infect machines with agent programs. The DDOS agent programs give intruders the ability to remotely

control the compromised machines and use them to overwhelm targeted sites with data packets

Dittrich notes that DDOS attacks are often successful because some syst have unpatched security vulnerabili ries and are easily overwhelmed by the speed and complexity of the intru-sions. He adds that root kits, which attackers use to replace operating sys nands and install multiple ack-door Trojan horse programs, are also becoming more sophisticated.

At the same time, Dittrich says, software and operating systems are demed for ease of use instead of secu rity, and vendors often leave open back ors that can be used for system diag-

tics. He points out that with 21 mil-

on hosts being added to the Internet

each month, the target environment is becoming richer for the most recent DDOS attack tools. Assuming that it takes 3 to 6 seconds to acquire each new host, an attacker can set up a new attack network of 2,200 agents in two to four hours, says Dittrich. That's an spressive number, considering it takes only 100 to 200 attacking hosts to knock a large site completely off a

Firewalls and Training Needed

According to Dittrich, poorly train network administrators and a lack of firewalls and intrusion-detection systems make it difficult to determine the source and strategy of attacks.

Poor system network forensic tools and skills means that we have no idea who did what, when, where and how."

He says most sites aren't prepared to capture the invading traffic on their networks or on subnetworks that would help them analyze packets and track attackers. He notes that sites under attack receive so many packets that it's difficult to locate the IP addresses of ster machines by using overburdened logging systems. When the University of Minnesota in Minneapolis was under attack, for example, the logging system could detect only 3,000 astacking host machines.

Attackers also use the User Data ram Protocol and Internet Control Message Protocol packet protocols.

which make it hard to detect and block packets, says Dittrich. The NetFlow FlowCollector tool from San Jose hased Cisco Systems Inc. can belp monitor traffic, he says, but it isn't compatible with other firms' hardware.

Improved Forensics Help

Network forensics is really, really poor in most cases," says Dittrich.

"Identification of agents is difficult because they cannot analyze packets and TCPdump [files]." Dittrich says sites under attack can contact their upstream and backbone

providers and have them locate the part of the upstream network where the packet flow is low enough to cap ture and analyze packets that may lead to the source of the attack. Most sites focus on restoring service without storing vital information about how the attack happened, he says. Sites

should instead dump date on a laptop for later analysis. "More people need to know how to analyze pack over their [intranets] and get around things like switches," Dittrich notes, Dittrich says Internet service providers should take care not to six

cut off an attacker's accounts, because that damages a possible trail that could be used to locate intruders. He adds that administrators can be

stop DDOS attacks by closing sec holes and installing firewalls and intro sion-detection systems. Building a secondary operations network that uses serial ports instead of telnet connec tions to switches and routers to moni tor packets can also belo protect networks, he says. Implementing IPSec and IPv6 security protocols is anot means of addressing the problem, as is auditing hosts for hidden DDOS tools and enforcing policies for secure hosts

In addition, Dittrich says, may should consider installing ingress and egress filtering on networks and estab lishing rate-limiting strategies that can

detect and block packet floods Dittrich says many companies of to sell products that can guard again

attacks but there is no sure thing that will keep networks safe. He notes that some vendors sell bost-based tools. while others focus on network-based prevention, detection and respon But, he says, such point approaches don't work. "If you don't have anything to enforce host-based security, you are just shunting the problem off to a place where it won't be solved," he says Regarding long-term solutions. Dire-

rich supports better ways of exchang ing information about DDOS attacks to match the speed of the computer underground and backs ongoing govern ment efforts to create private data distribution partnerships.

According to Dittrich, orga ould consider purchasing insurance to cover service disruptions, build incident response teams and hire a full-time chief hacking officer to scout for vulnerabilities and evaluate known

Dittrich says the business co ity must acknowledge security as a cost of doing business and vendors should hire developers who know how to write secure code. DDOS attack tools were first developed to take over Internet Relay Chat (IRC) channels, but they now intrude on critical functions such as transporting patient data in bospitals

"It's time to stop pandering to user nds for services and features and start teaching them how to survive in a hostile environment," says Dittrich.
"Either acknowledge that the Internet is not robust enough for critical services, or pay what it costs to make it secure. I don't want to die because some script kiddle is dissing someone on an IRC channel."



How DDOS Attacks Work



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Bandwidth

DEFINITION

Bandwidth refers to the transmission capacity of an electronic-communications line, such as a telephone line, that connects an individual computer to the Internet through a dial-up service provider. Transmission rates are measured by how many bits of data can cross the wire each second. Slower transmission speeds are measured in kilobits per second (1,024 bits, abbreviated K bit/sec, or Kbps), while faster transmissions are in megabits (M bit/sec.) or gigabits (G bit/sec.).

for gas or water uses metal or plastic pipes to serve your bome, an ternet service provider pumps communications bandwidth, or Internet connectivity, into a business or residence via electronic "pipes" such as standard trienbone lines, cable connections or edicated Internet lines.
Technically, bandwidth is a

measure of the communications capacity, generally expressed as a rate of how fast data can be stuffed down an Internet pipe

A rate of I kilobit per secon (IK bit/sec.) means the line can pass 1,024 bits of data each secend. Faster transmissions are measured in megabits per second (M bit/sec.) and now gigaoits (G bit/sec.).

You may recall another term, boud, once used to measure modem transmission speeds. Baud refers to how many times the electrical state (voltage or frequency) changes per second, and it was the original unit for measuring telegraph speed. At low speeds, 300 based is equal to 300 bit/sec. But at higher speeds, a single state change may signal multiple bits, and the correlation fails. The term boud is seldom used anymore.

While bandwidth may be similar to gas and electricity. several flavors of bandwidth are available to business and

Most consumers get Inter- these high-speed access meth-

"UST AS A PUBLIC utility | net access through a dial-up service. They connect their telephone lines to the modem port on their PC and then dial the local number of an Inserner service provider to reach the Internet. A standard PC modem converts analog phone signals to digital data transmissions for data coming into the PC and vice versa, PC modems deliver bandwidth ac .ransmis

sion speeds of 14.4K bit/sec. 28.8K bit/sec. and 56K bit/sec. Modem speeds above 56K bit/sec, aren't possible using a standard dial-up connection via a telephone line. The twisted-copper pair wires that make up telephone lines have an upper limit of S6K bit/sec. for analog signals, says Carl Gar-

land, an analyst at Current Analysis Inc. in Sterling, Va. Phone lines consist of "relatively crude copper pairs," he explains. "It's the nature of the quality of that hardware that is responsible for the severe bandwidth limitations of dialup Internet acress

High-Speed Internet Access Yet, as the Internet has

grown, so have the transmission rates. The way to get around the 56K bit/sec. analog limit is to use digital technology. Several all digital-to-digital connectivity options offer data transmission over the Internet at higher speeds than a dial-up connection.

Individually or collectively

ods are often called broadband. Broadband options include integrated cable modern, T-carrier lines and Digital Subscriber Lines (DSL), Each of these services differs technologically, but all are alike in offering dedicated digital Intermet access at 1.5M hit/sec or feater

Broadband promises to deliver Internet access speeds anywhere from five to 50 times faster than analog dial-up connections. And the cost is relationly low for cubic and DCI accres, typically about \$40 to \$50 per month. T-carrier lines are far more courly. Monthly access charges for TI service start at approximately \$400 per month

Phone companies have of-

fered an intermediate-level service, called Integrated Services Digital Network (ISDN), that delivers bandwidth up to 128K bit/sec. over a digital-to-digital dial-up connection to the telephone network, ISDN's cost of less than \$100 per month once made it affordable for smaller companies and some residential customers, but probi installing and maintaining lines and equipment have hastened ISDN's demise, according to Tere Bracco, an analyst at Ourrent Analysis. Trying to find someone at a carrier who knew what ISDN was or petting someone to install the line was the stuff of legend," she says. "ISDN is a dial-up backup solution for small and medium-size

New Options Available

First introduced by AT&T Corp. in the 1960s, a T-carrier line is the most common type of broadband communication line. A T-carrier point-to-point line consists of four copper wires: one pair to receive data, the other pair to transmit it. The slowest T-carrier line, Tl.

offers rates of 1.544M bit/sec. for most small businesses and but T3 can offer speeds of up to 44.736M bit/sec. (see chart).

Cable modems [QuickStudy June 15, 1999] and DSL [Quick Study, Feb. 27] are also growing in popularity. Adam Guglielmo. an analyst at TeleChoice Inc. in Tulsa, Okla., says the availability of DSL has made broadband access an option for smaller com punies and residential cus mers. "DSL is opening up broadband to small and medium sesses that would have liked to buy TI or a fractional TI but

found it too expensive," he said. Dedicated direct PC-to-Web broadband connections also of enience, T-carrier lines. cable modems and DSL stay on continuously with no dialing The Yankee Group in Boston

forecasts that the residential market for DSL and cable conbusinesses. There's no reason nections will surge from 1.4 to choose ISDN if DSL or cable million installations last year to 9 million by 2002. But with increased to

sion speeds comes increased risk, says Matthew Kovar, a Yankee Group analyst. "From a security standpoint, broadband is always on always vulnerable," he says. "It's a shared network infrastructure, like being on one huge [LAN], so anyone who is connected can see in someone cise's system." >



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EpicRealm Speeds Up Online Transactions

Network provider aims to make buving items on the Internet faster and easier

THE FOUNDESS OF epicRealm Inc., s value-added network provider that was launched in April in Richardson, Texas, en the "worldwide wait" to a e at Wait Disney World: It esn't matter how long the line is, they say, as long as it's

So they built a global network with sophisticated cach-ing and prioritization software that gives e-commerce custhing is happening. If a paysent screen takes too long to vice moves the request toward the front of the queue or displays other Web pages in the

Prioritizing Web traffic by content is the next step in managing e-commerce networks. epicRealm claims. "It's not ough to just get content out to the network. You've got to get user input back sooner," says John Ferguson, epicealm's president and CEO

Like other so-called comserce content distributors. epicRealm pashes content out to the Web's "edge" - servers located closer to users — so nages will load faster.

To accomplish this, epictains 30 server sites in the U.S. (and another 20 overseas) and uses special software to ensure that the content is synchronized with what's on "origin" servers.

Competing services "expire" set time formula, claims Keith Lowery, epicRealm's founder and chief technology officer. The protocol assumes that is can be measured in ms of time," Lowery says. synchronization that responds to changes at the customer site up-to-the-minute sports

scores for example - and makes sure they go out on the If epicRealm's Epic Central site detects traffic backing up

at a customer site it tells edge servers to begin servicing the highest-priority requests. Customers can also configure PriorityRealm to send "captivation" pages that entertain or in-

form users waiting in queues To promote PriorityRealm to rospective customers, epic Realm "crawls" their sites and reports back on the potential performance boost. This ability to optimize a site remotely is another differentiator, the comnany claims

Speed, Simplicity Rule

For Chris Doell, CEO of sportsTalk.com in Palo Alto. Calif., a sports news and discussion site, epicRealm speeds up access to his constantly chang-

JOHN FERGUSON (left) and CTO Keith Lowery say Epic-

EnicRealm Inc. untion: 1651 N. Glerville Drive Suite 212, Richardson, Texas

Telephone: (877) 348-8834 Web: www.spicresim.com The technology: Internet con-

lent distribution and networking Why It's worth watching Epic balm's service boosts e-commerce transaction speed for cus

ners through dynamic caching and other techniques. Company officers:

• John Ferguson, CEO

Keth Lowery founder and chief provident of marketing

committee. Burn money: More then \$90 million emerging companies capital firms, includng Seacon Informe 3mm ton lechnology inc. Intel Capital and Lehman

Brothers Venture Partners Product/pricing: Prorty/lissin service pricing varies with the amount of content or the mount edit and ranges anywhere from \$1,000 to hundreds of thou-

sands of dollars per month. mers: Buildscape, Fujitsu ICI, Systems Inc., Morningster Inc. scorts Talk.com and TD Weter

house Group Inc. Partmers: Arthur Anderson LLP. ISM Global Services and Fujitsu

Red flags for IT: Competing value-added networks and Web ware and switching vendors ing site by 15% to 25% and takes off his shoulders. Doell reports no problems using the epicRealm network and says he found setup to be painless. "We literally publish our content tree to a directory," he says. They actually come and get it and publish it so their site.

Doell says he is also im pressed by epicRealm's backing (it has raised more than \$90 million since its founding late last year) and competent customer service. "They left me with the impression they

necessary to make us success ful," he says. WebCE.com LLC in Dall which provides online training

primarily to insurance agents, signed up with epicRealm to ensure high availability by insulating itself from traffic snikes and hostile attacks. The fees that we're paying them are well worth the peace of mind," says Gary Henkel, the firm's chief operating offs cer. Besides getting better per formance, WebCE.com avoid ed hiring high-priced network

WebCE.com CTO Ross Howell says epicRealm's easy setup made it a clear choice over main competitor Akama Technologies Inc. in Cambridge, Mass. "The thing I didn't really like about Akamai is it requires you to make changes to your Web

engineers he says.

site," Howell says. EpicRealm's bigge challenge, says Ferguson, is growing quickly enough. Another challenge is locating network ements to meet the shifting demands of Web traf-

fic. Also in the works is a ses sion-management tool that will belp e-commerce sites manage the user's experience "Predictive analysis on the fly is something you'll see us do,"

Ferguson add

Armed with unique technol ogy and resources to build out its network, epicRealm likes its chances in the network services arena. "There are companies that say, 'We're going to address a global marketplace, but we're only putting infrastructure in Peoria," says Lowery. "You bet-ter have an infrastructure that

has global reach." Essex is a freelance writer in

the buzz

An Uphill Battle

Well-funded epicRealm is nonetheless the new kild on the block. The start-up has yet to convince enough people that and Digital Island Inc. in San Francisco.

That's the assessment of Joel Yaffe, an associate analyst at Gina Information oup Inc. in Cambridge, Mass. They have been spending a lot of oney on advertising and promotions

but they do not seem to be garning significant traction yet, probably because their technology is a little ahead of the market, "Yaffe says of epicifi Akamai and Digital Island have had

ore time to build their profiles, he says "Both focus on static and sh content distribution, while spic finelm's data is somewhat more advanced "he says. The problem that eox:Realm faces, however is that the market in not yet fully educated about the value of still concerned with performance and scalability for larger files (like graphics. streaming and others), rather than cut

ting costs for transactional systems," But when asked to compare the the firms, two epicRealm customers said its rvice is easier to set up because its of large graphics files and other Web content. Customers need only change a domain name server entry to redirect

spes to eox:Reelm's servers. direct and indirect competitors in net work services, software and hardware to add "customer awareness" features like epicRealm's within a year. The comount providers and hosting services want to

Realm's Global Commerce Network Akamai Technologies Inc. Cembridge, Mass. www.akamai.com

to its distributed servers and manages traffic for better performence. It doesn't

Digital Island Inc.

Another global network provider and t-delivery service with a dedicat ntog for streaming media, Digital



K. Wade Tohmon - Executive Vice President, Key Yechnology Services. "AT&T delivered a coneffective scalable and highly reliable network to handle our mission-critical data and business applications in a multi-protected environment."



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reliability, security and accessibility to support to many data transmissions, online burishing and business*
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reliability, security and burishing security and descriptions and private fine frame neity services. Kg/Cup now handes tens of millions of electronic transactions monthly strong facilities in 46 states with more than 2500 automated teller multi-less. 347
online burishing to purport and credit card processing services. If you want to transform your network into a valuable
autor in ATS Title you better—now.







Champions Of Knowledge

To stop the loss of knowledge and skills when employees leave, many companies are creating the role of the chief knowledge officer - charged with protecting and fostering intellectual capital. By Zachary Tobias

T HAS BECOME a truism of the New Economy that a company's most valuable asset is the knowledge in its work-

ers' heads.

So more and more companies are making it a top priority to ease the flow of skills and experience among employees — to save the resources workers waste when they have to learn for themselves what their colleanues already know.

Some companies are hiring experts skilled in knowledge management, the burgeoning discipline that seeks to enable businesses to make the most of their "intellectual capital."

businesses to make the most of their "intellectual capital." For the following chief knowledge officer (CKO), a self-described "missionary and evangelist" of knowledge management, the task at hand is to convert employees to a new way of thinking about what

Vice president and CRO The St. Paul Cos. St. Paul, Minn. www.stpeul.com The St. Paul is a 10,500employee insurance company with offices around the world.

Experience: After working as a university dean and educational TV program producer. Owens headed product development at computer based learning systems vendors Wicar Systems Learning Corp. in San Diego. Prom there, he joined Blaebell, Pa-based software vendors was the product of the product

Learning Corp. in San Diego. From there, he joined Bluebell, Pa-based software vendor Unitys: Corp., where he worked as vice president of worldwide professional development and then as vice president of knowledge management. A breakfunner looking for a

A headhunter looking for a training and development expert to head The St. Paul's corporate university contacted Owens last year.

Though the company wasn't looking for a CKO. The St. Paul was receptive to Owens' enthusiasm for knowledge management, and it craftled the new position just for him.

Owens' experience in training and development and project management set him in good stead for a job in knowl-

cdge management. While familiarity with knowledgemanagement information technology systems like Microsoft Corp.'s Digital Dashboard and IBM's DB2 KnowledgeX is im-

portant, he says programming skills themselves aren't. Responsibilities: Owens heads The St. Paul's corporate uni-

versity, an umbrella organization that trains employees both in classrooms and online. Owens organizes employees into groups that share professional interests, or "communi-

ties of practice." Since The St. Paul's offices are spread as far apart as Argentina and South Africa, its intranet and private children and private connected.

For example, when a risk manager in France was faced with a virus outbreak at a client hospital, he sent out an e-mail to a community of colleagues throughout the world who had dealt with similar problems.

Receiving their input within 24 hours, he was able to provide valuable information about the

Currently, The St. Paul is de-

weloping Knowledge Exchange, a part of the corporate university's Web site where employees can share information. Its "virtual collaboration system" includes a bulletin board, places to post meeting notes, access to webcasts and an "experience finder" that enables users to search for others within the

virus to the client.

company who might have knowledge relevant to their jobs. To develop the system, Owens meets with employees to determine their needs and then works closely with the IT department to make it as user-friendly as possible.

But technological solutions aren't the endgame. "Only 10% to 20% of the information in a company ever gets into a computer," he says. "We're trying to tap into the 80% of knowledge that sits in people's heads."

The real work is getting employees habituated to freely sharing what they know.

By encouraging managers to encourage their employees to encourage their employees to share their skills, and by recognizing with rewards those employees who actively do so. Owens says he hopes to create a corporate culture in which the exchange of knowledge becomes second nature. 8

Tobias is a freelance writer in Santa Cruz, Calif.

Just the Facts

in Manne and job title: David Owens, DNO and vice president in Company: The St. Paul Cos., on incurance company in St. Paul Minn. in Nature of his work: Owens

heads the company's corporate unversity and develops methods to ease the flow of side, and know how within the company. This includes working with the IT department to create an architecture that enables employees throughout the world to

costs an architecture that enables employees throughout the world to stay connected. In How he got the jeb: Owens we contacted by a head-unior seeking.

contacted by a headharter seeking a training and development expert for The St. Paul's corporate university. Dumit the interview process, the hiing team decaded to expand the role to include broader innoviedge management responsibilities.

ming side, aren't required, an understanding of the capabilities of knowledge-management (II systems is. Communication skills and the ability to work with people across departments are musts, and some bed-

is Salary potential: Earnings rangfrom \$50,000 to se much as \$1 miltion, but most CNOs earn between \$150,000 and \$250,000 per year. is Career path: Since knowledge management touches on many ac-

a Career paint: Since involved per management flushes on many expects of how a business or run, if's good preparation for withally any corporate strategic handon, says Devres, Many Innovatiogs management expects have worked as e-commence companies and consulting flusion, and some have gone on to become ECDs at der-coms.

on to occurre LCLE at concerns an Advisor Be patient. It takes tim to convince employees unfernier with innovincing management of a value. It's especially important to fine support of top executives. "We've spent a good emount of its preaching the goosel of innovincing management to upper manage."

has Your intern wants a bigger salary than you.

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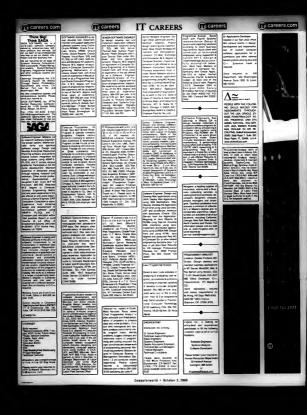
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The Brixton Group

While IT profusionals are its business, the Briston-Group is a leader in bringing together salent and companies in a personal way that discusses the rate of tumover for both. Briston specializes in permanen recruitment from the naturation/programming level we through the COI level.

Andrew Sohal started the company almost three years ago. The month candidates for preminent predicts with ordered or freelence work. We will only represent those candidates that we hadren will integrate efficiently into the collents, we will as the technical eminions of our clients," the explains. This is one major difference between oat and other companies."

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figure Schol, Briston's online manager, adds, "There is no way to get around ordine recruiting in this day and age. Homeone, we believe that many stong condictions are possine, and they do not need to use celline secretifing sides. Wh've found that the names of the best people get around. So we rely on our nationals to fill them." Sobil styl the most sought after sochreck skills are distribution and seeb development. Ther management positions, we're looking for those who have come up through the technical stells, for those who have been on the lost firm. We believe they make more effective managem."

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"We have had very life terrors, despite the terrors done growth," very field. We believe that exact pouples must be used with the expect, and we are in this spect. They want to grow as software engineers, which we can color. All employees participate in our employee stock option plans, and we have a very files also environment—in internal of purchase, that also his environment—in internal of purchase and those and a defining year can work space and have and when you will known into me learning assets."

eComServer provides cross-platform experies to its customers, who include Lucent Technologies, AT&T, Mertil Lynch, Prudential, Merck Inc., Samsung and the City of Name York

Patel says he mends software engineers, NR programment, product support engineers, sales supesentatives and traditional beariness operation services Technical skills should include Java, C, C++, Corba, systems integration, tools, development, analytical skills and toolsheeboding skills.

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Online Giant Victim Of Its Own Success

AOL faces big hurdles in its search for expansion

MERICA ONLINE Inc. can give the market 24 million good reasons why it will remain a rising financial

performer Even though AOL's [NYSE:AOLI stock io the past year has dropped from a high of \$95 to a low of \$48, the world's biggest loternet service provider boasts 24 million subscribers

that it can continue to sell on new services and content. But in the search to keep expanding Dulles, Va.-based AOI. faces some big challenges: first and foremost, its quest for approval from U.S. and European regulators for its proposed \$350 billion merger with Time Warner Inc. [NYSE/TWX] in

New York Altbough AOL's stocks have been sluggish, revenue grew 43% to \$6.89 bil-



select their own laternet providers, to avoid antitrust allegations "There will be a lot of scrutiny and it will require a lot of OKs and making sure every i is dotted and t is erossed before they move forward," says Scannell. "That's one problem of growing to the size of the behemoth " !

new subscribers. Last week, it inked an-

analyst at Mobile Insights Inc., a

of unanswered questions, says Uric

Weil, technology strategist at Arling-

ton, Va.-based Friedman, Billings, Ram-

Nevertheless, if AOL can overcome its regulatory hundles, the result will be

sey Group Inc., an investment bank. "In a merger of that size, investors know things don't always go perfectly." he says.

Mountain View,

consultancy.

saciog and e-mail services

lion for the fiscal year ended June. The company has been pushing espe-

cially hard to get its AOL Anywhere email and news services out to wireless users. This past summer, it cut deals with Redmond, Wash-based AT&T Wireless Services [NYSF:AWF] and Kansas City, Mo.-based Sprint PCS Group [NYSE-PCS] to reach millions of

other deal with Tokyo-based NTT Mobile Communications Network Inc. to deliver wireless instant mes-While AOL is growing and

has captured the Internet market, it now has to much AN AN AN ANNIO into areas it's not comfortable with specifically, providing content over the

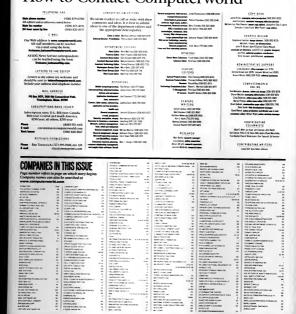
wireless pipeline, says Tim Scannell, an Calif.-based And the planned merger has left a lot

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Continued from paye I

Energy

from American Petroleum, followed by Bentonville, Ark.based Wal-Mart Stores Inc.'s purchase of 30 million vallons of low-sulphur fuel which will be shipped to II storage sites. Earlier this year, Procter & Gamble Co. in Cincinnati tapped Columbus, Ohio-based online marketplace Energy-Gateway.com to buy the natural gas that powers 50 of its

North American plants. "Diesel and gas are commodities, and that simplifies buying online," said leff Ridings, an energy procurement manager at UPS. "There aren't a lot of unique features that have to be evaluated "

Another reason more com mercial buyers are moving to electronic energy exchanges is to lock in rates. As energy markets are deregulated, "retail buyers are exposed to the same giant price swings that you have on the wholesale man kets," explained Richard Baxter, an energy analyst at The Yankee Group in Boston.

In response, "commercial and industrial customers are working with retail (online) energy exchanges to create a profile of their demand, which they put up on the exchange for wholesale suppliers to bid on at reverse suction," Baxter | three years, half of those play- | line business trade.

said. "It's a win-win for both sides: The seller gets to guarantee a profitable sale, and the commercial customer can get a guaranteed rate for [one] year."

Significant administrative cost savings can also be had, because exchanges aggregate and reconcile all purchases, saving time and money for the buyer's internal accounting department. UPS, for example, now processes about 3,000 paper-based

energy invoices per month at a cost of \$20 to \$40 per invoice. Thanks to its fully integrated set of computer systems, the American Petroleum Exchange will aggregate the invoices, presenting UPS with a single elec-

tronic bill each business day Yet cost-cutting IT services aren't enough to woo every

commercial buyer online. Fred Wood, energy and facilities manager at Wawa, Pabased convenience store operator Wawa Inc., has wet to join an energy exchange. He said be wants to deal with an exchange whose managers are know edgeable about the energy instry and who have a record

of successfully completing large commercial transactions After talking with several exchanges about buying online. he beld off because of his own lack of experience and the exchange's lack of a track record.

"It's a new and exciting morket, and there's going to be a lot of new players, but in two to

Online Energy

ral gas and PPG Ind

----or Enerme te Sells to com

rs in de R Pr quibb, Pepsi-Cola Bottlers, lew York Housing Authority

pany: American Petro n Exchange

TE LIPS Wel-Mart ers will be gone," be added. Forrester Research Inc. in Cambridge, Mass., forecasts that online energy sales, primarily among wholesalers, will ceach \$171 Nillion by 2004.

Forrester says commercia buvers will also move en mass to the Internet to autor their request-for-proposal and request-for-quote proces By 2004, Forrester expects bid systems to capture 16.5% of on

Continued from page 1

E-Signatures approach these requires

with a certain degree of pervousness," said Christopher Gilkerson, vice president and associate general counsel at San Francisco-based brokerage Charles Schwab & Co. "They raise the thorniest issues of interretestion."

At a Securities Industry Association conference on the topic last week, some attorpers arrived that the electronic-signature act applies only in certain cases, such as when contracts are signed, and does-

n't necessarily cover all documents that are delivered electronically. Mark Borges, the SEC's at-

torney adviser at the Division of Corporation Finance, advised brokerages to comply with both sets of rules until the SEC makes a final determination on its stance. But he said his remarks shouldn't be viewed as the agency's official

stance on the matter Meanwhile, the ele ignatures law officially called the Electronics Signature in Global and National Commerce Act, allows for exemp tions. That means the SEC could decide that online brokerages could continue to send out digital prospectuses to customers without verifying that

the "I Love You" virus, and Coulter's team spent too many hours going through a 10-step rocess to purpe it from all the

infected machines.

New buildings mean new network switches; at least that's true for Gary Ures. The network administrator at Simula Safety Systems, a safety products company in Tempe, Ariz., came to Networld/Interms to talk with switch wen dors and find out more about storage-area networks.

the main reasons I came was to meet other network people and ask them what really works." That, be said, can save network people a lot of time, the customers can access the information SEC spokesman Chris Ulli-

man said the agency doesn't yet have an official response to Wall Street worries about conflicting e-document rules. "We are aware of the concerns that people have, and we are developing regulatory guidance that we hope to have out soon," be said, but he could offer no definite time frame Attorneys for big brokerages

said they're impatient with the SEC's wait-and-see attitude. "If the commission down't put forward a view, there's go ing to be enormous confusion out there," said Sam Scott Miller, a partner at Orrick Herrington & Suggliffe LLP in San Francisco. "What makes you think that a year from now you're going to know an awful lot more than you know pow? And meantime, people are go ing to be making unistakes."

Uncertainty Rules

Others, such as invest bankers, said they wouldn't want to go through the expense and hassle of revamping their or invest in new technologic to meet the new electronic-sig natures requirements only to have to make another set modifications should the SEC elect to change its guidelines. Wall Street executives are also concerned that some of the rules spelled out in the e-signatures legislation are im-

possible to carry out. For example, under the legis-lation, digitally stored documents must be kept in an "unalterable" state, according to Section 201 of the act. This is an unreasonable demand, said Michael L. Michael, senior vice president and chief comp ance officer at Fidelity Invest

ments in Boston We all know that in a paper based environment, there is no such thing as an unalterable

In the electronic wo records can also be tampered with. Optical disks that can be written only once can be altered, he said

"If you were to smash or with a hammer, that's altering it," he said.

N/I Packs 'em in as Users Seek to Network

Loudspeakers blasting past the threshold of pain, vendors yanking network managers from the aisles into their booths and people trying to pack a month's worth of meetings into a few days: Yes, it's trade show season again.

This particular action took place last week at the fall Networld/Interop exposition and onference in Atlanta. Despite the obvious aggra-

vation, people like Bruce Rupprecht, a network administrator at the Beaverton School District in Beaverton, Wash., ministrator at the Morganton,

to see what kind of software was available to measure network utilization and trending.
"I'm also looking for anything I can find on IP content multicasting," Rupprecht said. including products for converting analog audio and video to digital to send over the network to classrooms in his 45-school system. Rupprecht said he's even multing moving phone systems to voice over IP to get better use from his Giga-

bit Ethernet. Terry Coulter, a network adCenter, which cares for the mentally retarded, is also in ested in videoconferencing. At the Avaya Inc. booth, he researched video technologies. Basking Ridge, NJ-based Avzya was formed as a spin-off of Murray Hill, N.J.-based Lucent Technologies Inc. Coulter also stopped at the booth of Cupertino, Calif. based Symantec Corp. Apparently, the Norton AntiVirus

software from Symantec be had installed on a couple of bundred PCs in his organic tion didn't detect a variant of For Ures, though, "One of

trouble and money.

FRANK HAYES/FRANKLY SPEAKING

Let the users do it

OW THAT SUMMER IS OVER, it's time for corporate IT shops to get back to the serious business of unloading as much work as possible on users. No, really we should be continually shifting routine tasks from our plate to theirs. Technology and users' increasing technical sophistication make that possible. These days, users generate reports, rework user interfaces and create Web sites - things that once would have required navigating a six-month IT-shop

We need to

palm this

kind of work

off - we've

got better

things to do.

backlog and three levels of managerial are proval. Now users do those tasks from their PCs

every day. Because they do, we don't have to. And the more we can get them to do, the less of our resources we burn on routine tasks and the more we have for making new technology useful to

the husiness At a trade show over the sun mer. I ran into an old vendor under a new name. Blaze Software Inc. has some application development tools designed to let users do routine maintenance on applications. Specifically it less them change the business rules in the application without requiring

(Programmers do have to build the applications to start with. But once they're done, routine main tenance like changing what kind of customer gets a discount or when to deny credit can be handled by ordinary mortals.)

Maybe this sounds familiar: It's a lot like the business-rules-based technology that a company called Neuron Data offered a decade ago, back in the days when the list of fourth-generation languages didn't begin and end with Visual Basic. That's oo surprise - Blaze is really just Neu Data with a new coat of paint,

new management and an IPO But it's still a good idea - in fact, maybe a better idea now that users are used to revising spreadsheets and tweaking off-the-shelf software

We don't actually need Blaze to do it. We just need to decide from oow on to build our applications as user-maintainable as we can.

Why? Not just because it means less work for us. Not even because it gives users more control over their tools - and they're the ones who know what those tools need to do and how in

ways we'll never completely get

Mainly, we need to palm this kind of work off on users because we've got better things to do. We simply can't afford to do lots of routine mainteoance, not if we're going to deliver the projects that only IT can drive, like B2B e-commerce and full-blown supply-chain integration.

That's where we're creating But we have limited budgets and bodies. The more mechani-

cal, routine tasks we do, the fewer high-profile, high-benefit things we can deliver. We're stuck with some tasks help desks and bug fixes will be

with us forever. But what we can get users to do, we should. Funny thing: Everybody else seems to have figured out this let-the-users-do-it routine

already. On the Weh, customers do their own data entry and routine customer service, so customer-service reps can focus oo the harder questions, where they're really needed. Human resources departments put benefits information on jotranets for

employees to browse self-service style too And we know from their experience that users like it - at least, wheo the systems are

designed to make self-service easy. We'll have to make it easy for them to maintain their own apps, too - and make sure the wrong users can't arbitrarily change business rules or policies.

But we can do that. And we should, Because the more we do - the more work we hand off to users - the more time and resources we'll have for doing the really good stuff.

Hayes, Computerworld's senior news columnist, has covered IT for more than 20 years. Contact him at frank_hayes@computerworld.com.

P1LOT FISH working for a delense contractor has some slack time between projects, so the boss outs him on a processi team. They're cutting and pasting from previous procesals to create a new proposal. "I notice that none of the old proposa and wan onlone in between ness," says the lish. "Lasked my boss if it was were to cut and paste from losing proposals. His response. That's some of my

WHO ARE YOU? Another peop lish between projects asks the boss for a new assignment, [7] get back to you in a few days says the boss. Days pass with out a word, so the fish asks again. I'll get back with you, the boss says. A week later, the lish finally hears something: The boss is demanding a desk audit of the fish "because he wasn't

sure what I was doing anymore

for some users to open their

SYSTEM ADMINISTRATOR plot lish at a warehouse/plent far from the main office is get user complaints. The network connection is a 56K bit/sec. ased line, and sometimes they need to transfer 200MB of data for hours. It takes 10 minutes

mailboxes Fish knows the offreal word at that PCDM Time's count effective for the rate " but this is getting awful, he tells the boss. She agrees: "Do something to speed this up," she says. "But it can'l cost anything." ASPIRING NEW EXEC at a

microfiche company tours the computer room and gets a brain storm: We should be using our own products to get ori of all this. paper, he decides. He issues a mandate: Within a month, pull out all the printers and replace them with Tiche printers. "Have you ever tried to debug a program on a microfiche reeder one ect at a time, with no markup?" grumbles a plot lish in the trenches. "Needless to say, our

secretaries' printers became

orici/Interco: "Broadband? We already have broadband It's just that they want to give us a little information at a time. Pump a lette mio to sharky@ ees print, you score a sparry Shark T-shirt - the perfect las ion statement. And check out the daily feed on the Web Visit





II, that's the third one in as many clicks. I'm re this just a coincidence, still, don't use the auricher again until The had a look at it."

Don't let your e-commerce deployment become a sci-fi

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WHY FINNAIR IS GOING WITH OUR E-BUSINESS SOLUTIONS

ONG HAUL

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allows Finnair's pertners and cliants to place orders and track cargo status and location vie the internet. What's more, we integrated this e-business solution into Finneir's existing systems. So the airlina's Wab-enabled cargo operation could be up end flying quickly and economically. All of which puts Finneir miles ahead of the competition. But thet's what you'd expect from the people who are elways raady to go the distance for their clients www.unisys.com

